

Comprehensive
Food Security and
Vulnerability Analysis
(CFSVA)

Cameroon

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Data collected in May 2017



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List of Acronyms

CARI	Consolidated Approach for Reporting Indicators of Food Security
CFSVA	Comprehensive Food Security and Vulnerability Assessment
DSCE	Document de Stratégie pour la Croissance et l'Emploi (Strategic Document for Development and Employment)
ECAM	Enquête Camerounaise Auprès des Ménages
FCFA	Franc Communauté Financière Africaine (African Financial Community Franc)
FCS	Food Consumption Score
FCS-N	Food Consumption Score - Nutrition
FSI	Food Security Index
IMF	International Monetary Fund
INS	Institut National des Statistiques (National Institute of Statistics)
IRA	Infection Respiratoire Acute (Acute Respiratory Infection)
MDD	Minimum dietary diversity
MICS	Multiple Indicators Clusters Survey
MINADER	Ministère de l'agriculture et du développement rural (Ministry of Agriculture and Rural Development)
MINCOMMERCE	Ministère du Commerce (Ministry of Commerce)
MINEPAT	Ministère du plan, de l'économie et de l'aménagement du territoire (Ministry of Economy, Planning and Regional Development)
MINEPIA	Ministère de l'élevage, des pêches et des industries animales (Ministry of Livestock, Fisheries and Animal Industries)
MINSANTE	Ministère de la santé publique (Ministry of Public Health)
MUAC	Middle-up arm circumference
PNLP	Programme National de Lutte contre le Paludisme (National Malaria Control Program)
rCSI	Reduced Coping Strategy Index
RGPH	Recensement Général de la Population et de l'Habitat (General Population and Housing Census)
TLU	Tropical Livestock Unit
SPSS	Statistical Package for Social Science
WFP	World Food Programme

1 Highlights

This report presents the **results of the Comprehensive Food Security and Vulnerability Analysis (CFSVA)** study carried out in May 2017 across the entire territory of Cameroon (10 regions).

Around 16% of households are estimated to be food insecure (3.9 million people), including 1% that are severely food insecure (around 211,000 people). The regions of the Great North that have historically been exposed to issues related to food availability, access and utilization are still among the most food insecure, particularly the Far North (33.7% of food insecure households), followed by Adamawa (15.4%) and Nord (15.3%). Surprisingly, the regions of North West and West also recorded high rates of food insecurity (respectively, 18.1% and 18% of households), most probably because of the Anglophone crisis that escalated in West affecting its neighbouring regions.

More than a fifth of rural households (22%) are food insecure compared to 10.5% of urban households. In rural areas, the most common sources of income are agriculture and small businesses, while in urban areas, these are public or private skilled labour (37.1%) and traders (20.3%).

Approximately **22% of households have inadequate food consumption**, including 18% with borderline and 3% with poor food consumption. The situation has deteriorated compared to the 2011 CFSVA, with a 35% increase of rural households consuming inadequate diets. The most significant increase occurred in the Far North (+22 pp), North West (+27 pp) and Adamawa (+ 8 pp).

Overall, **7.5% of children 6-59 months had low mid-upper arm circumference (MUAC)**, ranging from 13% in North to 1.7% in West and with differences by place of residence: rural areas (9.8%), other urban areas (5.3%) and Yaoundé and Douala (3.5%).

Overall, **7 out of 10 households reported having experienced a shock** during the 30 days before the survey. More than 80% of households in the divisions of Logone-et-Chari, Mayo-Danay, Mayo-Kani, Mayo-Sava and Mayo-Tsanaga (all located in the region of the Far North) were affected by at least one shock. The type of shocks that households experienced varies across regions and wealth groups. Overall, illness or death of a household member (39.7% of households), loss of job or of income sources (26.1%) and delayed rains/droughts (25.4%) are among the most frequently reported shocks. Erratic rainfalls and pests, together with unusual diseases of livestock or crops represent the most frequently reported shocks by households located in Far-North, North, North-West and West – where agriculture is the main income generating activity.

One in five households have adopted coping mechanisms that had a negative impact on their livelihoods. This includes coping strategies classified into three severity categories: stress (26.3%), crisis (18.1%) and emergency (2.9%). The top three most adopted coping strategies were as follows: 33.7% of households spent savings (classified as stress), 18.2% borrowed money/food (classified as stress) and 12% reduced expenses on health and education (classified as crisis).










Nationally, **almost a third (30%) of households spend more than 75% of their expenditure on food**, although there is significant geographic variation: Far North (54.2%), Adamawa (41.8%), and North (43.5%). Moreover, **73.8% of households do not have access to credit.** Those who contract debts mainly use it to pay school fees (29%), to access health services (26%), and to buy food (16.6%).

The wealth index shows a north-south divide: the northern part of the country has the highest prevalence of households in the poorest quartile, especially in the Far North, where 65% of households are in the poorest quartile. Conversely, the southern part of the country has a higher prevalence of

middle income and better off households, with peaks in the urbanized cities of Yaoundé and Douala.

Agriculture production patterns diverge across food secure and food insecure regions. In food insecure regions such as West and Far North, food production is relatively low despite a higher than average proportion of the population cultivating lands (70% and 76% respectively). In these regions, the main constraints are access to land and low yields. In food secure regions such as South and East, production per farmer is much higher (2.8MT/farmer and 2.2MT/farmer respectively) despite a lower proportion of the population being farmers (58% and 59% respectively).

Figure 1: Characteristics of households most vulnerable to food insecurity

Rural vs. Urban		Households located in rural settings are more vulnerable to food insecurity (22.2% food insecure and 1.4% severely food insecure) than households located in Yaoundé or Douala (10%) and in other secondary urban centers in the country (12%).
Livelihoods		Populations depending mainly on agriculture and on petty trade are more exposed to food insecurity (27% and 20% of these are food insecure, respectively). Small traders living in rural areas are more prone to be food insecure than their urban counterparts (31.9% vs. 15.9%). Similar patterns are observed for farmers (29.7% vs. 17.4%) and for those depending on credit or aid (23.7% vs. 10%).
Education level of the head of household		The higher the level of education of the household head, the more likely households are to be food secure: 26% of households headed by a non-educated head are food insecure against 15% who completed primary school, 11% who completed secondary school and 5% holding a higher degree.
Migration		Almost 9% of households include a migrant among its members. Migrants usually transfer money or food to their families hence contributing to their food security: 10.9% of households having at least one member migrated are food insecure against 16.4% of households having no member migrated.
Age of the head of household		Households whose head is more than 60 years old are more exposed to food insecurity than households whose head is younger (21.7% vs. 15.1% of households whose head's age is in between 26 and 60 years and 12.4% of households whose head is less than 25 years old).
Chronically ill/disabled persons		1 out of 5 households have disabled or chronically ill people. These households are slightly more prone to food insecurity. Over 17.2% of households with disabled or chronically ill people are food insecure, with the highest prevalence in the regions of Far-Nord (29.8%) , Adamawa (26.8%) , North West (24.5%) and the city of Douala (29.1%) .
Dependency ratio		Households including a higher number of children or elders – who do not contribute to income generation are more vulnerable to food insecurity than households with a smaller number of dependents (19% vs. 15%).
Household size		No significant difference of food insecurity recorded between the different categories of household size. Only exception, the single-headed households in rural areas are more likely to be food insecure (27% vs 22% of those with two members or more), while an opposite trend is observed in urban areas (9% vs 11%)
Gender of the head of household		Relatively small difference on prevalence of food insecurity between female and male headed households (18.1% vs. 15.2%).

2 BACKGROUND

With a population of 23.7 million people, Cameroon is a country located at the crossroads of West and Central Africa. Despite being situated in an area troubled by conflict and crisis, the country has enjoyed economic growth and relative peace over the past decades.

Human development indicators, however, remain low: Cameroon is classified as lower-middle-income¹ by the World Bank and is ranked 153 out of 188 in the 2015 Human Development Index². The overall number of the poor has increased, increasing from 7.1 million in 2007 to 8.1 million in 2014. Rural areas, which have approximately 60% of the total population, include 90% of the Cameroonians who live below the poverty line, i.e., less than 931 FCFA per day. The 2015 Global Hunger Index (GHI) ranks Cameroon 68 out of 104 with a score of 24.2, placing it in the “serious” severity level of hunger³.

The agricultural sector has the greatest potential in driving economic growth and reducing poverty and hunger. Yet, outdated agricultural practices, high post-harvest losses, fragmented markets and recurrent cycles of droughts and floods – shocks that have mainly affected the Sahelian regions – limit the opportunities to break out of the poverty trap, while affecting the food security status of the population.

In addition, Cameroon has been caught in between the crises in the Central African Republic (C.A.R.) and Nigeria, which have resulted in large-scale population displacements across borders and within the country. Indeed, Cameroon currently hosts approximately 360,000 refugees from C.A.R. and Nigeria and over 180,000 internally displaced persons (IDPs). Conflict and insecurity related to the Boko Haram insurgency have disrupted many economic activities, particularly cross-border trade and agriculture.

2.1 Agroecological zones

Characterized by a richly diversified natural environment, Cameroon is also called ‘Africa in miniature’. The country includes three main natural regions, which are sub-divided into five zones.

The southern forest (including the regions of Centre, East, Littoral, South and South West) is situated in the maritime and equatorial zones. This region is characterized by dense vegetation, a vast hydrographic network and a hot and humid climate, with abundant rainfall. The agro-climatic characteristics of this region allow for the cultivation of cocoa, palm oil, banana, rubber and tobacco. In terms of infrastructure, this region includes the two largest cities of the country: Douala (the most populated city of Cameroon, its main port and economic capital), Yaoundé (the political capital), Edéa (hosting aluminium and hydroelectric power industries), Limbe (the main centre for the oil industry) and Kribi (the terminal of the Chad - Cameroon oil pipeline).

With an average altitude of 1100 m, the western highlands (covering the regions of West and North West) are characterized by volcanic lands that allow for the cultivation of coffee and other cash crops. The climate of this regions is cooler and the vegetation is less dense; the average population density exceeds 134 inhabitants per square kilometre⁴. Such human pressure on natural resources is one of

¹ <http://www.worldbank.org/en/country/cameroon/overview>

² <http://hdr.undp.org/en/countries/profiles/CMR>

³ <http://www.ifpri.org/cdmref/p15738coll2/id/130707/filename/130918.pdf>

the major causes of the emigration of the population, particularly of young people to urban centres, such as Douala and Yaoundé.

The Sudano-sahelian north (covering Adamawa, North and Far North) is a region of savannahs and steppes. The climate of the Adamawa plateau is more temperate, however the rest of this region is characterized by a hot and dry tropical climate. The areas closer to the Lake Chad are characterized by erratic rainfall patterns. This area is suitable for cattle rearing and the cultivation of cotton, onion, millet, potatoes, white yam and groundnuts.

Despite the climatic, geographical and ecological diversity and differentiated agricultural and pastoral productions, part of the population of this country cannot escape economic difficulties.

Table 1: Agro-ecological characteristics, geographical features and rainfall patterns of Cameroon

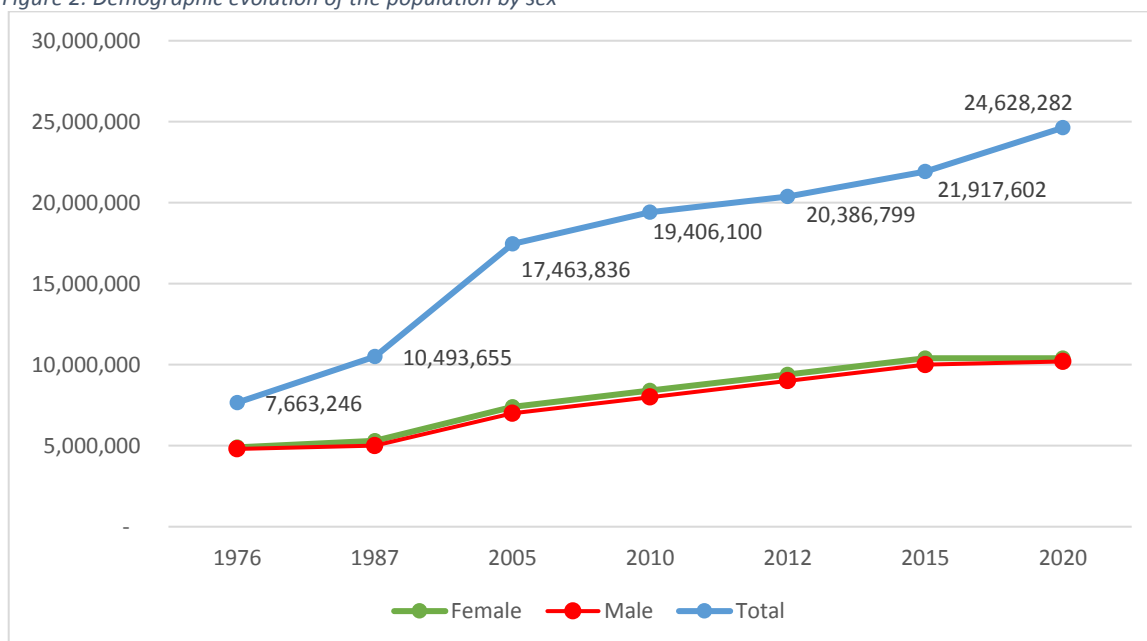
Agro-climatic zones	Regions	Altitude (m)	Number of rainy days per year	Number of rainy months per year	Rainfall (mm)
Sudano-Sahel Zone	North and Far North	700 – 300	90 – 120	3 – 5	500
High Guinea Savannah	Adamawa	900 – 1400	110 – 150	7	1500
Humid Forest (bimodal rainfall)	Centre, Est and South	500 – 800	125 – 175	7 – 9	1400 – 1600
Humid Forest (monomodal rainfall)	Littoral and South West	0 – 500	180 – 240	9 – 12	2000
Western Highlands	West and North West	750 – 2000	175 – 220	7 – 9	1750

2.2 Population and demographic trends

The results of the General Population and Housing Census (“Recensement Général de la Population et de l’Habitat” 2005 and 1987), the population of the Republic of Cameroon was estimated as of 1 July 2016 at 22 709 892 people, of whom 50.6% are women. Cameroon has a young population: more than half of its population is below 20 years old, and people below 15 years represent 42.5% of the overall population. The age group made of people whose age is more 65 years or more accounts for only 3.6% of the population.

Center, Far North and Littoral are the most populated regions of the country. With a rate of growth exceeding 2.5% per year, the population density is gradually increasing, passing from 45 inhabitants per km² in 2014 to 47 inhabitants per km² in 2015. Despite this overall trend, regional differences are worth to mention: the regions of Littoral and the West have respectively 165 and 138 inhabitants per km², while the regions of East and South are characterized by a lower population density (with respectively 7 and 16 inhabitants per km²).

Figure 2: Demographic evolution of the population by sex⁵



2.3 Incidence and intensity of poverty

According to the results of the fourth national household survey conducted by the National Institute of Statistics (Institute National de Statistiques, INS), Cameroon has not been able to meet the poverty reduction targets set by the United Nations in the framework of the Millennium Development Goals. The same holds for the objectives included in the Strategic Document for Development and Employment (Document de Stratégie pour la Croissance et l'Emploi, DSCE): this survey showed that poverty rate increased from 39.9% in 2007 to 37.5% in 2014/2015.

In order to achieve the MDGs, the country should have decreased the poverty rate from 53% in 2001 to 26.5% in 2015; to comply with the DSCE, this rate should have fallen to 35.2% in 2015.

2.3.1 The number of poor people has increased

Since 2001, the number of Cameroonians who live below the monetary poverty line (that is below 339,715 FCFA per year, which corresponds to less than 931 FCFA per day) has increased, passing from 6.2 million to in 2001 to 8.1 million in 2014. This is due to the fact that the rate of poverty reduction (approximately 0.34 per year) is extremely lower than that of population growth (on average 2.6% per year). It is worth to mention that the 2007 rate of poverty was at 7.1 million, with a monetary poverty line set at 269,443 FCFA per year. This indicates a constant increase in the cost of livings, which has further deteriorated the situation of the poor. Theoretically, an adult would need an additional average of 130,200 FCFA per year to escape poverty; this amount was of 83,000 FCFA.

According to the INS, in 2015 the number of poor people could have been reduced only if the country had achieved a poverty rate of less than 32%. The government aims to achieve this goal by 2020 with the commitment of reducing the poverty rate to 28.7% through an average sustained economic growth of 5.5% between 2010 and 2020. However, the average rate of growth between 2010 and 2014 was around 4.7% per year. To catch up, "the real GDP rate of growth between 2015 and 2020 should be above an annual average of 7% ". Despite the commitment, the government has projected an annual rate of growth of only 6% until 2017. The International Monetary Fund (IMF) fears even a

⁵ RGPH 1976, 1987, 2005 and projections

decline in growth due to structural competitiveness – including a weak business environment for private investment and lack of progress on regional integration – may continue to hamper the development of the private sector leading to an average rate of growth of only 5%⁶.

2.3.2 The number of inequalities has increased

Inequalities between poor and non-poor have increased by 13% between 2007 and 2014. For instance, the consumption of the 20% of the richest households accounts for 10.1 times that of the 20% of the poorest households, whose sizes are by far bigger.

With the average rate of growth of 4.7 over the period 2007-2014, Cameroon could have had achieved better economic development if the gap between the poor and non-poor remained stable⁷: "if inequality – measured by the differences in consumption between poor and non-poor – remained unchanged, the level of economic growth could have reduced the poverty rate from 39.9% in 2007 to 21.8% in 2014 – that is a drop of 18 points. Inequalities have therefore negatively impacted the poverty rate by 15.7 points. In other words, if growth had remained zero between 2007 and 2014, poverty would have significantly increased, reaching 55.6% in 2014 – a rate that is higher than that experienced in 1996.

2.4 Agriculture, livestock and fisheries

Cameroon's economy mainly relies on agriculture. Cocoa, coffee, cotton and banana are the main exported crops. Its arable land is estimated to be less than 5% of the entire territory; moreover, the exploitation of forestry, mining and fisheries represent an additional contribution to the economy of the country.

2.4.1 Agricultural sector

Cameroon is characterized by a variety of landscapes, geomorphological and climatic zones that are classified in five regions. The mono-modal forest zone is favorable for the cultivation of cocoa, banana, coffee, plantain, palm oil, ginger and pepper. The bi-modal forest allows for the cultivation of cocoa, coffee, cassava, plantain, maize, palm oil, pineapple. The highlands are suitable for the cultivation of cocoa, coffee, maize, dry beans, potatoes and market gardening. The high savannah allows for the cultivation of cotton, millet, sorghum, yams and potatoes. The main crops cultivated in the Sudano-Saharan zone are cotton, millet, sorghum, cowpea, onion and sesame⁸.

Overall, 47 million hectares of Cameroon's land are used for the agricultural sector: the arable land covers approximately 7.2 ha; pasture covers approximately 2 million hectares. Despite such availability of arable land, only 1.8 ha of land are currently cultivated (that is 26% of the total arable land).

2.4.1.1 Main crops produced, imports and exports

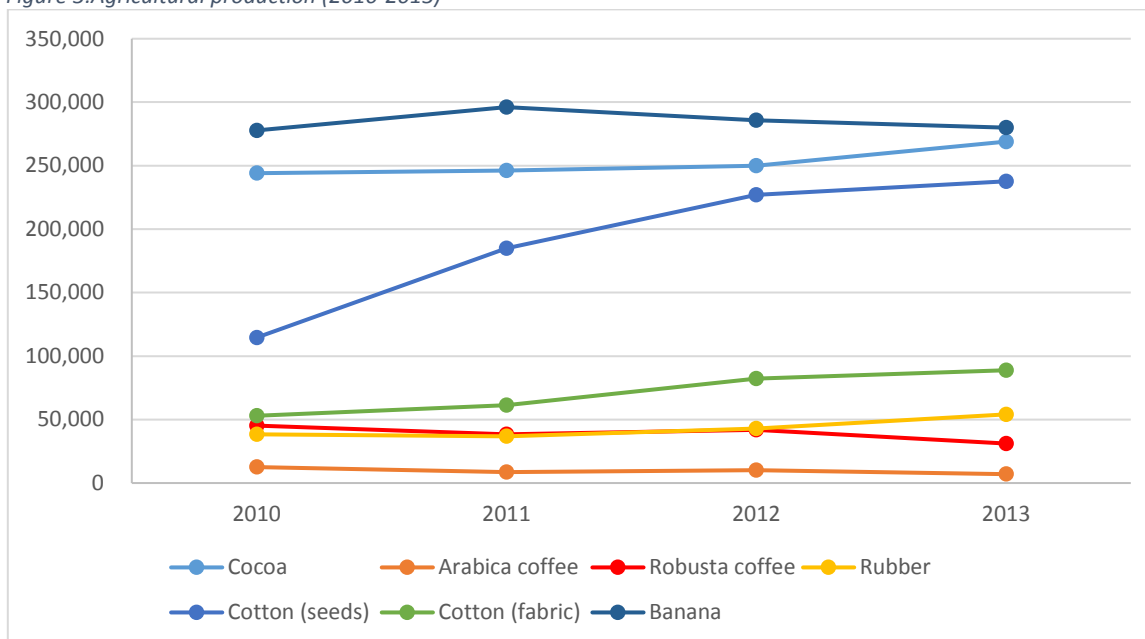
Crops such as maize, rice, cassava and macabo/taro are produced throughout the entire country; the production of potato is negligible in the Eastern part of the country, whilst that of yam is negligible in the Far North.

⁶ Banque mondiale, 2016: Perspective du monde: outil pédagogique des grandes tendances mondiales depuis 1945

⁷ [ECAM 4](#)

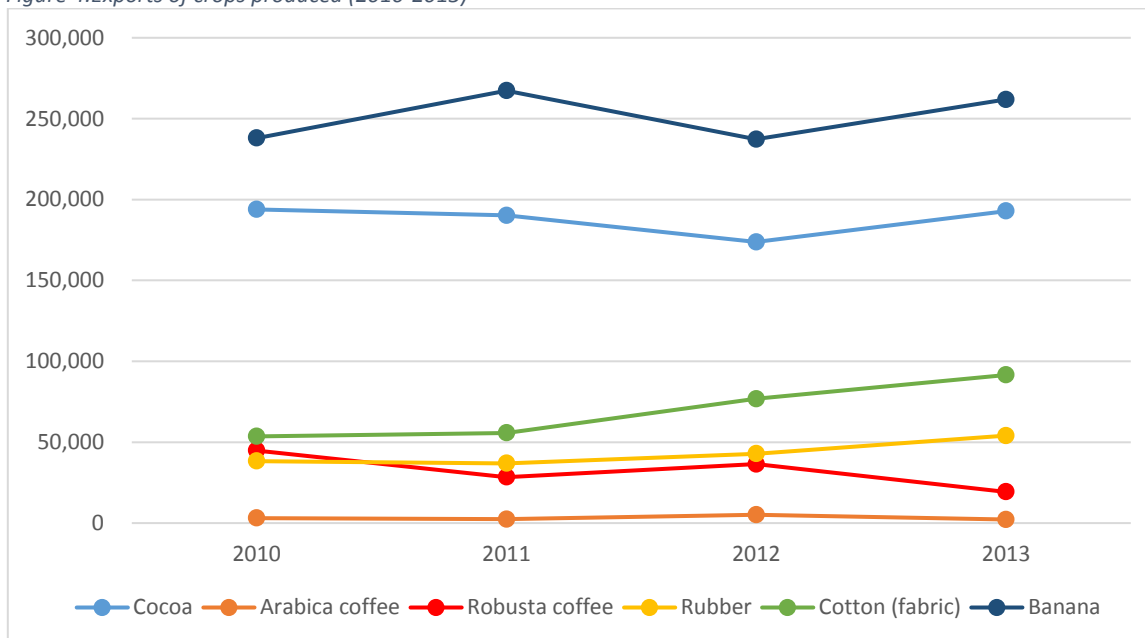
⁸ Document de stratégie de développement du secteur rural (SDSR), 2006

Figure 3: Agricultural production (2010-2013)



The country exports most of the crops it produces; however, starting from 2013, the export of arabica coffee has fallen, passing from 5,148 t to 2,228t – that is a decrease in 2,228 t compared to the previous year; similar trends were observed in the export of robusta coffee (export fell from 44,830 t in 2010 to 19,280 t in 2013). Such decreases can be a consequence of the decrease in productivity.

Figure 4: Exports of crops produced (2010-2013)



Cameroon mainly imports rice and fish. Rice imports have increased passing from 366,483 t in 2010 to 590,975 t in 2014; the import of fish decreased from 166,013 t in 2010 to 145,078 t in 2014. In addition, the country imports almost 100% of wheat used to produce bread⁹.

⁹ MINCOMMERCE, 2015, INS, 2015

2.4.1.2 Constraints to the development of the agricultural sector

Figure 5 below summarizes the constraints to agricultural development identified by SDSR. Despite being published in 2006, such constraints still apply to the current situation of the country.

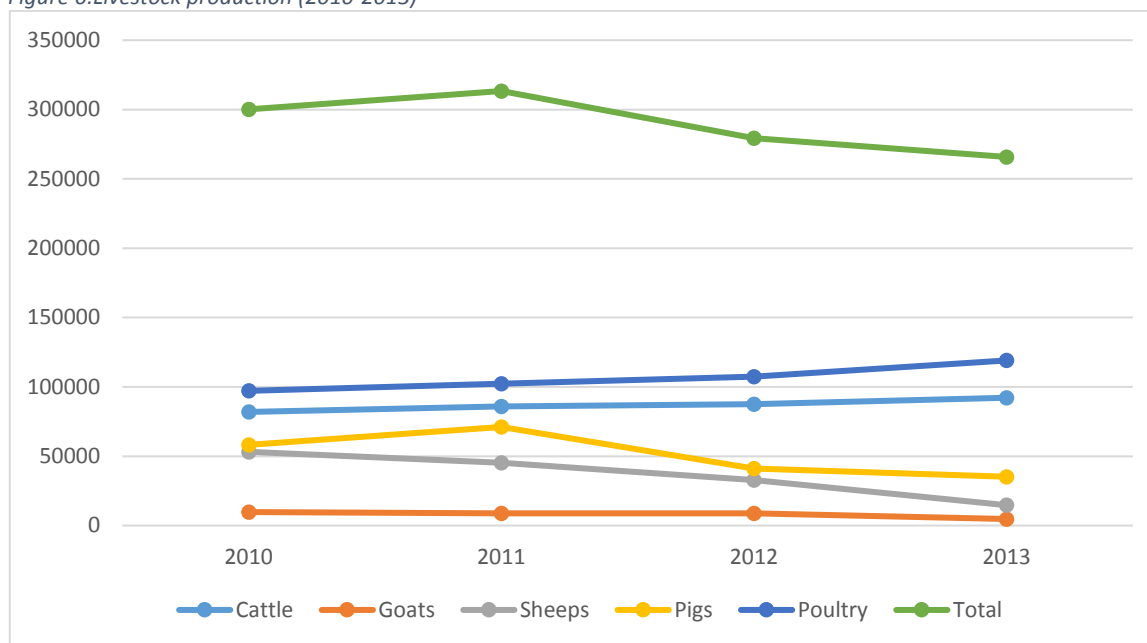
Figure 5: Constraints to the development of agricultural sector

CONSTRAINTS					
Productivity	Living conditions in rural areas	Organization and training of producers	Management of natural resources	Insufficient funding	Uncertain living conditions in rural areas
<ul style="list-style-type: none"> • Under exploitation of arable land • Negligible use of techniques allowing for high yields • Access to land (particularly for women and the youth) • Poor soil quality and low access to agricultural inputs <ul style="list-style-type: none"> • High prevalence of animal/plant diseases • Poverty of sea • Low access to credit 	<ul style="list-style-type: none"> • Inadequate market and communication infrastructure • Low processing and stocking capacity <ul style="list-style-type: none"> • Lack of information on market opportunities • Low competitiveness of local products • Inadequate managerial skills of local actors • Unorganized markets 	<ul style="list-style-type: none"> • Weak managerial skills of organizations • No hierarchical system • Inadequate quality and quantity of equipment • Aging of producers and migration to urban areas • Lack of training/training structures 	<ul style="list-style-type: none"> • Lack and poor quality of statistical data • Inadequate coordination and cooperation • Fiscal burden • Inadequate legislation on land use • Incomplete legislative and regulatory framework 	<ul style="list-style-type: none"> • Self-financing <ul style="list-style-type: none"> • Lack of information on financial opportunities • Low mobilization of rural savings • Weak involvement of rural communities • Weak mobilization of external aid • Decrease in private funding flows • Inadequate capability of credit management 	<ul style="list-style-type: none"> • Producer's low income level • Inadequate socio-economic infrastructures • Inadequate living conditions

2.4.2 Meat production in Cameroon (2010-2013)

Cameroon produces different volumes of meat depending on the different type of species. Overall, different types of species (cattle, goats, sheep, poultry, pigs) are raised throughout all the regions of the country; however, with less than 100 t produced on yearly basis, goat production is negligible in the regions of South, West and East. The graph below shows the change in the total meat production between the years 2010-2013.

Figure 6: Livestock production (2010-2013)



Between 2010 and 2013, the production of meat recorded some significant decreases. In particular, sheep production fell by 50% (that is to say a decreased in 4,996 t); goat production fell by 75% (corresponding to a decrease in 38,456 t) and pork production fell by 23,101 t. Overall, Cameroon produced 300,208 t of meat in 2010; the productivity achieved 313,367 t in 2011 and then fell to 279,268 in 2012, reaching 265,816 t in 2013 (which corresponds to an average loss of 40,000 t)¹⁰.

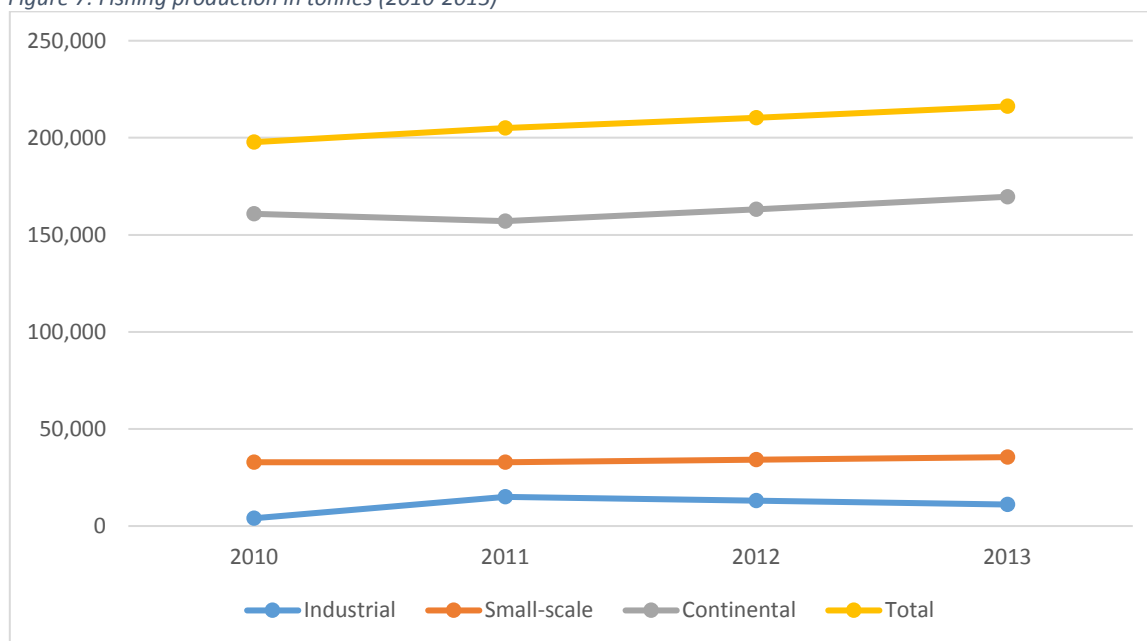
2.4.3 Fisheries

Fishery is an essential sector for the population from a nutritional and socio-economic point of view¹¹. In terms of food consumption, seafood represents the most accessible source of protein for the population, contributing to 25.5% of protein intake of their diets. The average per capita seafood consumption is 17.9 kg/inhabitants against 13.07 kg/inhabitants of meat. From a social point of view, rural populations are mainly involved in small-scale fishing; such activity is a source of employment not only for fishermen but also for those make their own living thanks to activity related this practice. The country also relies on continental and industrial fishing. Figure 7 below shows the evolution of fishing production between 2010 and 2013.

¹⁰ MINEPIA/DEPCS from INS, 2015: 261

¹¹ NGOK E. et al, 2005; BELAL E. et BABA M., 2006

Figure 7: Fishing production in tonnes (2010-2013)



In terms of imports, sardines, bars and tilapia are the main seafood imported. The volume of imported fish recorded a decrease passing from 194,615 t in 2010 to 118,609 t in 2013. Such decrease might be explained by a gradual decrease in the demand and slightly increases in local production (INS, 2015 :265).

3 OBJECTIVES

The CFSVA study in Cameroon had the objective to define updated reference data for an overall better comprehension of the current situation, trends and risks related to food insecurity and malnutrition of households across the country.

The objectives of this study were as follows:

- Establish a profile of food-insecure households or households who are at risk of becoming food insecure (vulnerability)
- Determine the prevalence of food insecurity by level of severity (severe, moderate)
- Estimate the number of food insecure or vulnerable people
- Identify areas where food-insecure and vulnerable households live, and what type of future food and / or non-food assistance should be prioritize
- Analyse the coping strategies adopted by households facing of shocks, and the possible consequences
- Identify and geographically localize the main causes of vulnerability
- Understand the future risks to food security (socio-economic or political shocks, natural disasters or other) so that they can be included in the emergency programs
- Analyse market profile and its functioning (system, structure, concentration, accessibility and connectivity, integration, government policies and regulations, price change, supply and demand for food products, etc.);
- Study the influence of markets on household food security;
- Identify the direct and underlying causes of household food insecurity

- Define targeting criteria for food-insecure households for aid programs
- Identify indicators relevant to the monitoring of vulnerability, food insecurity, food security monitoring system
- Propose interventions and strategies to support the long-term development objectives on poverty reduction, strengthening / sustaining livelihoods and household food security.

The measurement and analysis of the middle-up arm circumference (MUAC) of children aged 6 to 59 months will also give further insights on the current and future prospects on the food security and nutritional status of the population.

3.1 Partnership and coordination of the CFSVA

The Cameroon Country Office of WFP collaborated with the Government of Cameroon through the MINADER, MINEPAT, MINEPIA, MINSANTE and the INS to conduct this study in all 10 regions of the country.

4 METHODS

4.1 Sampling

A two-stage cluster sampling approach was applied for the CFSVA, with enumeration areas (cluster) as primary units, and households as a secondary unit:

- Stage 1: 960 clusters were randomly selected, using probability proportional to the number of households in each region to ensure that each household in the population – whether from a small or large village – had an approximately equal probability of being selected. However, this rule was not applied to the cities of Yaoundé and Douala – including 40 clusters each – due to their structural dissimilarities. Five replacement clusters were designed for each region to correct for the inaccessibility of some villages.
- Stage 2: Ten randomly selected households within each cluster were also sampled.

The power allocation (or proportional to \sqrt{N}) was used to correct for the over-representation of the most populated regions. Furthermore, the sample size for rural and urban areas of each region is proportional to the household size. The allocation obtained was adjusted to reach the minimum number of households per stratum¹².

The sample is representative at national and regional level both for rural and urban areas, and for the cities of Yaoundé and Douala. Due to the presence of refugees and internal displaced persons, the survey provides results at the divisional level for the regions of Far-North, North, Adamawa and East. The sampling methodology took also into account the 5 agro-ecological zones of the country.

This survey is based on the CFSVA methodology and analysis plan developed by the WFP Vulnerability and Food Security Analysis and Mapping Unit (VAM). The WFP CARI methodology was used to estimate of the prevalence of food insecurity in each stratum of the study. Estimates of the Cameroonian population in 2017 were obtained through a projection of the population data from the RGPH 3.

¹²Refer to Annex I, which includes the formula used to derive the minimum number of households per stratum

4.2 Data collection

Primary data collection was conducted from 8-27 May 2017. Prior to data collection, field staff – including enumerators, team leaders and supervisors – participated to a 10-day training course on food security and market assessments. After the training, data collection tools were tested in enumeration areas that were not sampled. In the first 2 weeks of data collection, 5 supervision teams – including WFP, MINADER and INS staff – closely monitored field teams to ensure that data collection was properly done in compliance with instructions and methodology.

The market assessment – consisting of a market, a trader, a carrier and a producer survey – was led by a national consultant who collected this information with a team of 3 enumerators. 233 traders, 55 carriers and 56 producers were interviewed in 40 markets.

Primary household data was collected by 26 teams, each made of six enumerators and a team leader. The team leaders were also responsible for the collection of community data through focus group discussions. 872 focus group discussions were conducted to gather background information about the vulnerabilities of household, market availability, access to health facilities, schools and safety nets within communities.

Smartphones were used for the data collection. Once collected, data were regularly transmitted to a server for cleaning and control purposes. At the end of this process data was converted in SPSS format and analysed. A posteriori weighting was applied to household data to ensure that the statistical analysis was representative at the national level. From the 11,520-household sample designed, 11,475 households were covered during the assessment (97 percent of the total sample size), due to difficulties encountered in recuperating some smartphones.

This analysis also includes data and conclusions from previous and complementary studies to CFSVA. A national consultant was responsible for secondary data analysis and desk review; qualitative data was integrated and triangulated with quantitative data to explain the results of the survey.

5 Limits

The CFSVA was prepared and conducted with the maximum of methodological considerations. All possible steps were taken to ensure that the results of this survey accurately represent the food security situation in Cameroon. However, some limitations must be acknowledged:

- Data collection took place in May 2017, in a context of the Anglophone Crisis. This might have influenced the results, particularly the perception of shocks in the concerned regions of North-West, West and South-West.
- Given the multiplicity of agroecological zones in Cameroon, some results might have been influenced by seasonal factors related to the period of data collection. The survey was conducted in May 2017 during the period of reduced availability in the southern part of the country, and pre-lean season in the north.
- MUAC was the only child anthropometric measurement collected in the CFSVA. Enumerators did not measure oedema. Furthermore, the number of children screened does not allow to assess the nutrition indicators with rigor. Therefore, these results should be interpreted with caution.
- The questionnaires were in French and English but were sometimes administered in local languages. The interviewers had a good understanding of the French and English versions of the questionnaires and a good command of the local languages spoken in their areas of

assignment. To minimize the possible biases due to misinterpretation of questions or concepts, enumerators were also trained on the use of data collection tools in local languages. However, it might be possible that translation error might have occurred, affecting the quality of the data collected.

- Unavailability of data together with difficulties in accessing historical or up-to-date information did not allow for more in-depth agroeconomic and market analyses to better understand the food security situation. Methodological differences (tools, survey design, etc.) used for the CFSVAs carried out in Cameroon (2007, 2011 and 2017) do not allow for a rigorous comparison of certain food security indicators over time.

6 OVERVIEW OF FOOD SECURITY

6.1 The Food Security Situation

The food security analysis is based on WFP’s Consolidated Approach for Reporting Indicators of Food Security (CARI¹³), a method which combines a suite of food security indicators (food consumption score, food expenditure share and livelihood coping strategies) into a summary indicator – the Food Security Index (FSI). The FSI classifies households into four standard descriptive groups: food secure, marginally food secure, moderately food insecure, and severely food insecure. The latter two groups can be combined and classified as food insecure households.

Table 2 presents the percentage of households by food security classification, each of the three food insecurity indicators and the FSI. Overall, 16% of households in Cameroon are food insecure (moderately food insecure and severely food insecure), which is approximately 3.9 million people. Out of this number, close to 211,000 people are severely food insecure, which means that they have limited or no access to sufficient, nutritious food that is required to live a healthy life. Four percent of severely food insecure people has poor food consumption, 23.3% spends more than 75% of their monthly budget on food, and 3% used ‘emergency’ coping strategies in the last six months before the survey.

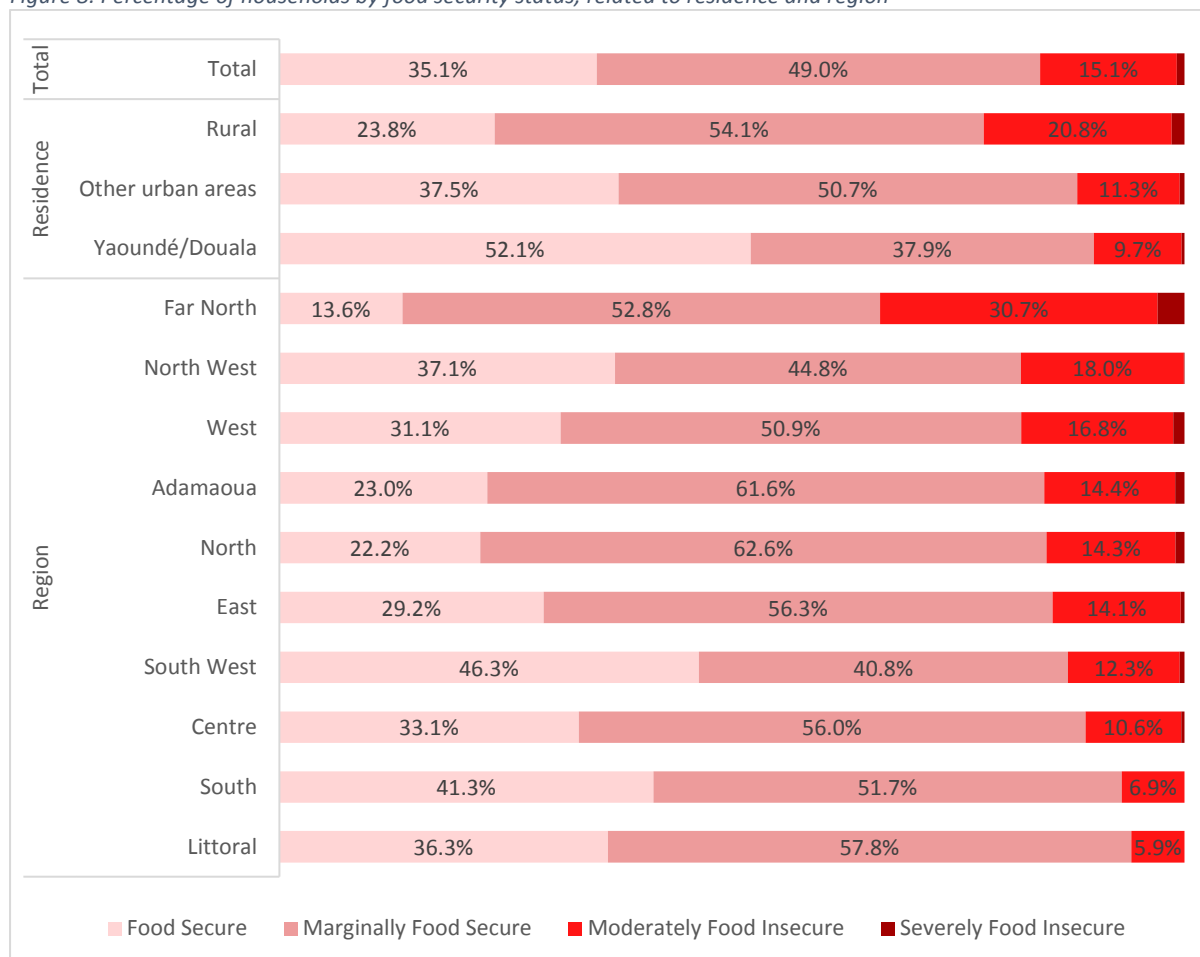
Table 2: Food security classification based on the CARI

Domain		Indicator	Food Secure	Marginally Food Secure	Moderately Food Insecure	Severely Food Insecure
Current Status	Food Consumption	Food Consumption Score	78% Acceptable (>35)	–	17.7% Borderline (21-35)	4.3% Poor (<21)
Coping Capacity	Economic Vulnerability	Food Expenditure Share	39.5% < 50%	23.3% 50 - 65%	13.9% 65 - 75%	23.3% > 75%
	Asset Depletion	Livelihood Coping Strategies	52.6% No coping	26.3% Stress	18.1% Crisis	2.9% Emergency
Food Security Index			35.1%	49.0%	15.1%	0.9%

¹³ Technical guidance [Consolidated Approach to Reporting Indicators of Food Security \(CARI\)](#)

Figure 8 presents the percentage of households by food security status, place of residence and region. A higher percentage of households in rural areas are food insecure (22.2%) than households in Yaoundé and Douala (10%) and other urban centres (12.4%). At the regional level, Far-North has the highest prevalence of food insecure households (33.6%), followed by North West (18.1%) and West (18%). The lowest prevalence of food insecurity was in Littoral (5.9%), South (6.9%) and Centre (11.1%).

Figure 8: Percentage of households by food security status, related to residence and region



6.2 Where are the food insecure?

Food security status varies with and within the regions. Far-North – the poorest region, with 65.5% of households in the poorest wealth quartile – has the largest proportion of food insecure population (33.6%). With the proportion of households falling in the poorest wealth quartile ranging from 84.4% in Mayo-Danay to 45.3% in Diamaré, the divisions located in this region are also the poorest ones. Mayo-Tsanaga is the division with the most alarming situation: here the proportion of food insecure households is 65.6%; followed by Mayo-Sava (which had 37.8% food insecure households) and Diamaré, where, despite a lower proportion of households in the poorest quintile, 31.8% of households are food insecure.

Map 1: Prevalence of Food Insecurity by Region

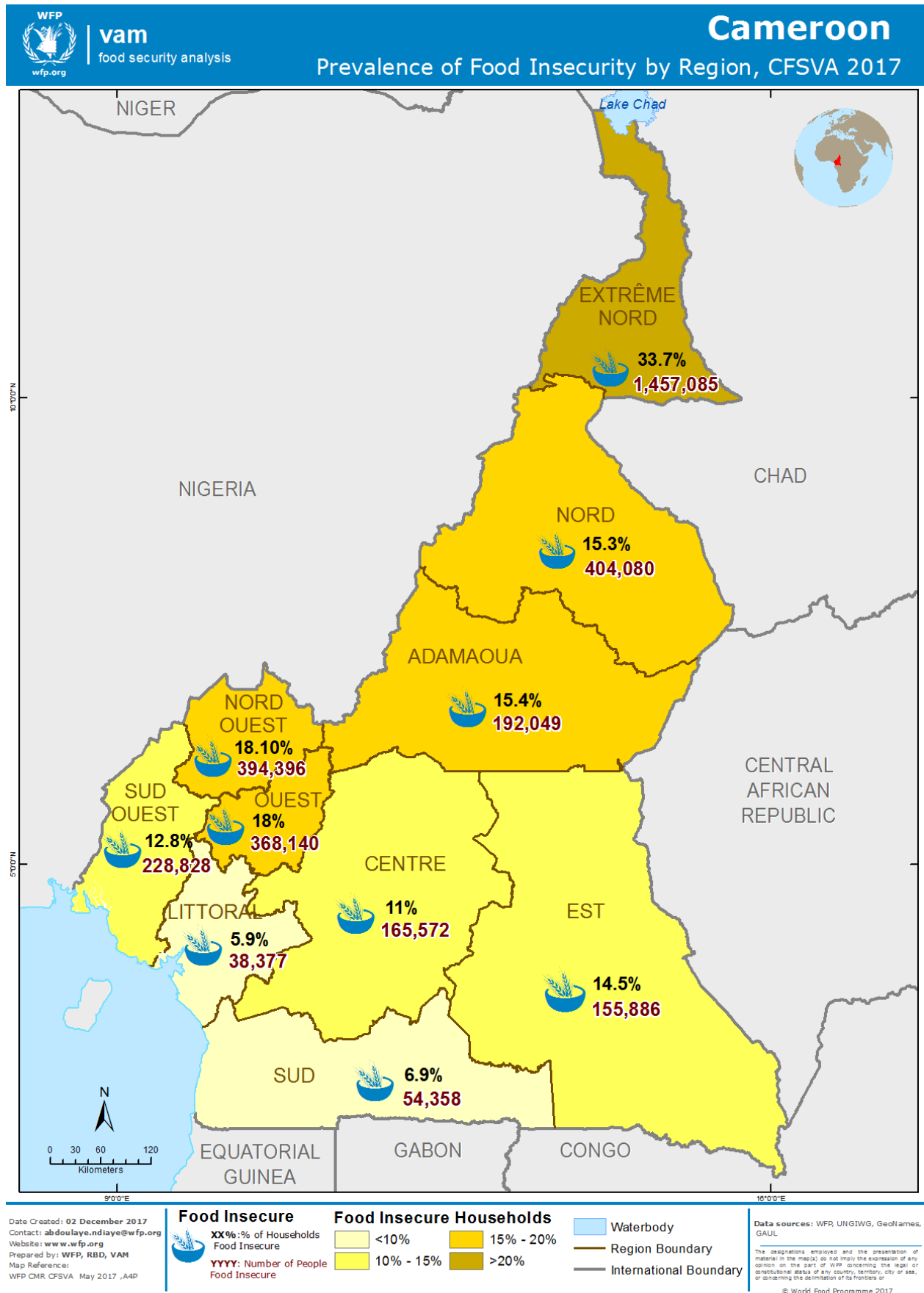


Figure 9: Far North: Drivers of Food Insecurity

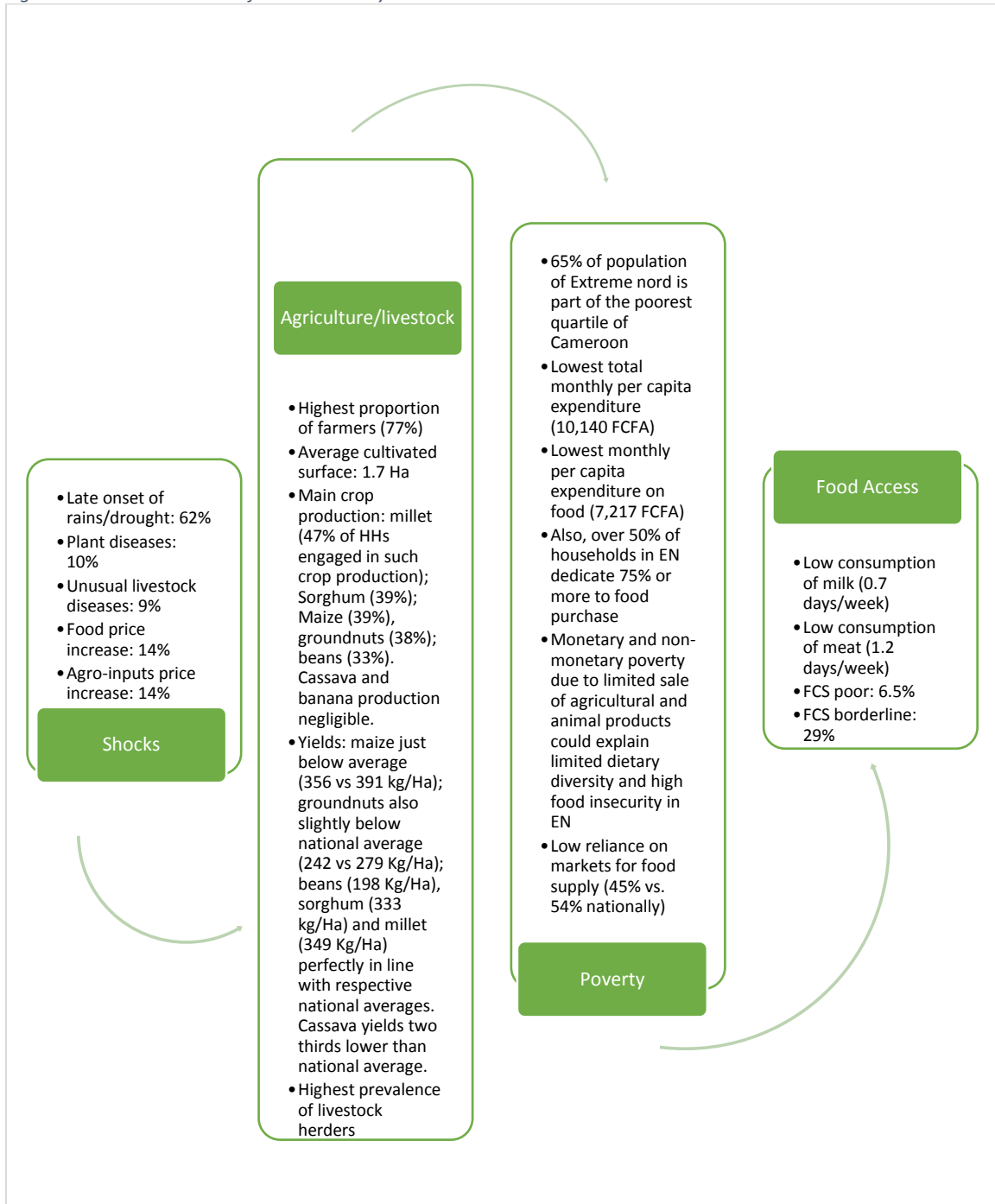


Figure 10: North West: Drivers of Food Insecurity

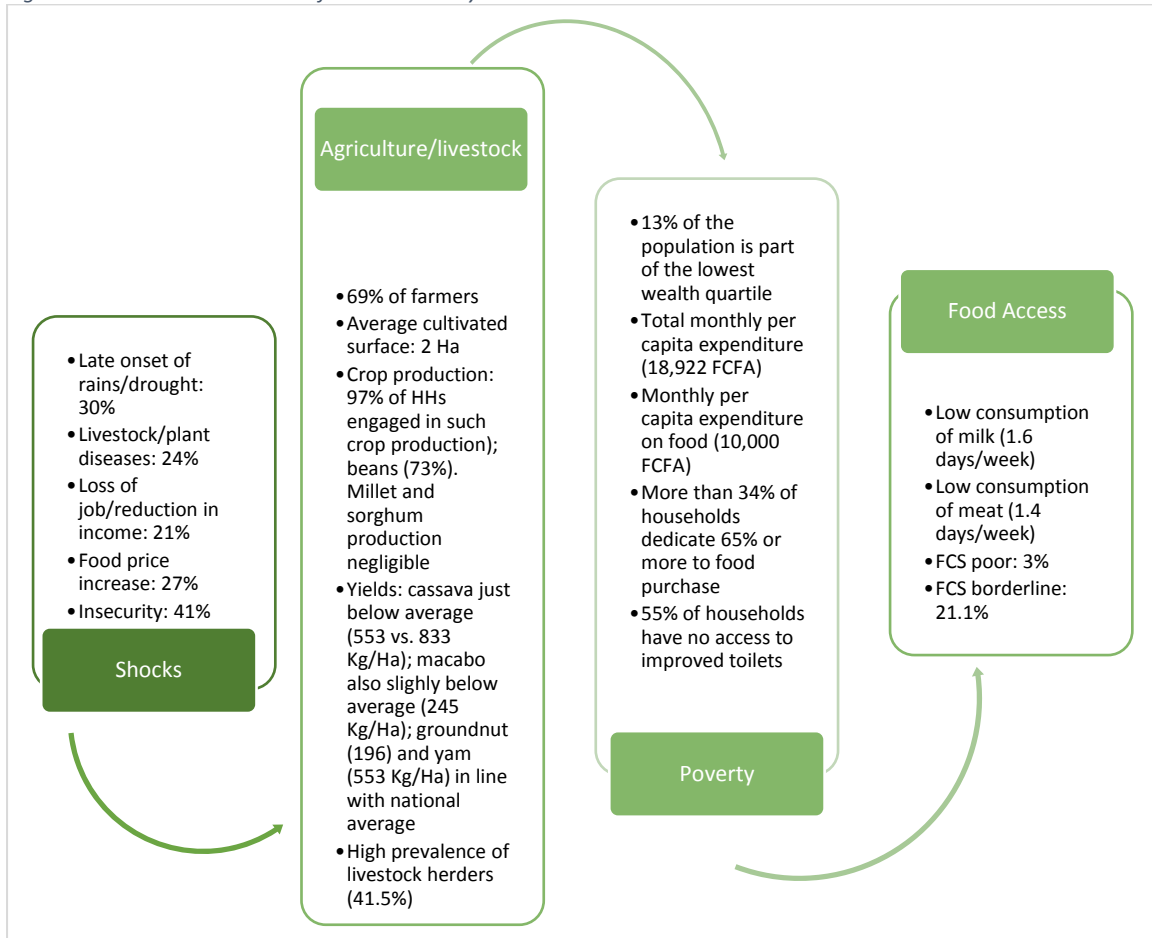
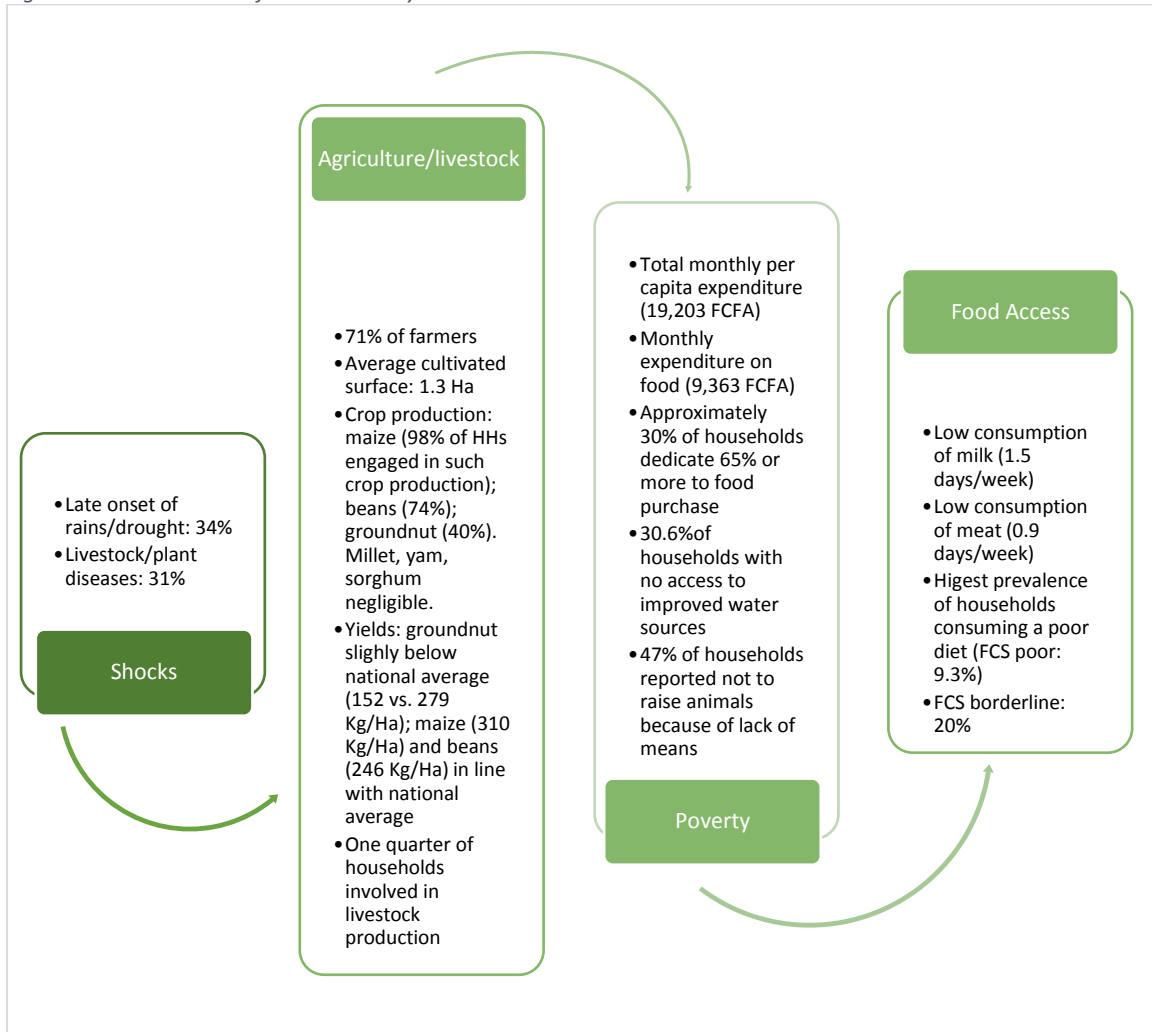
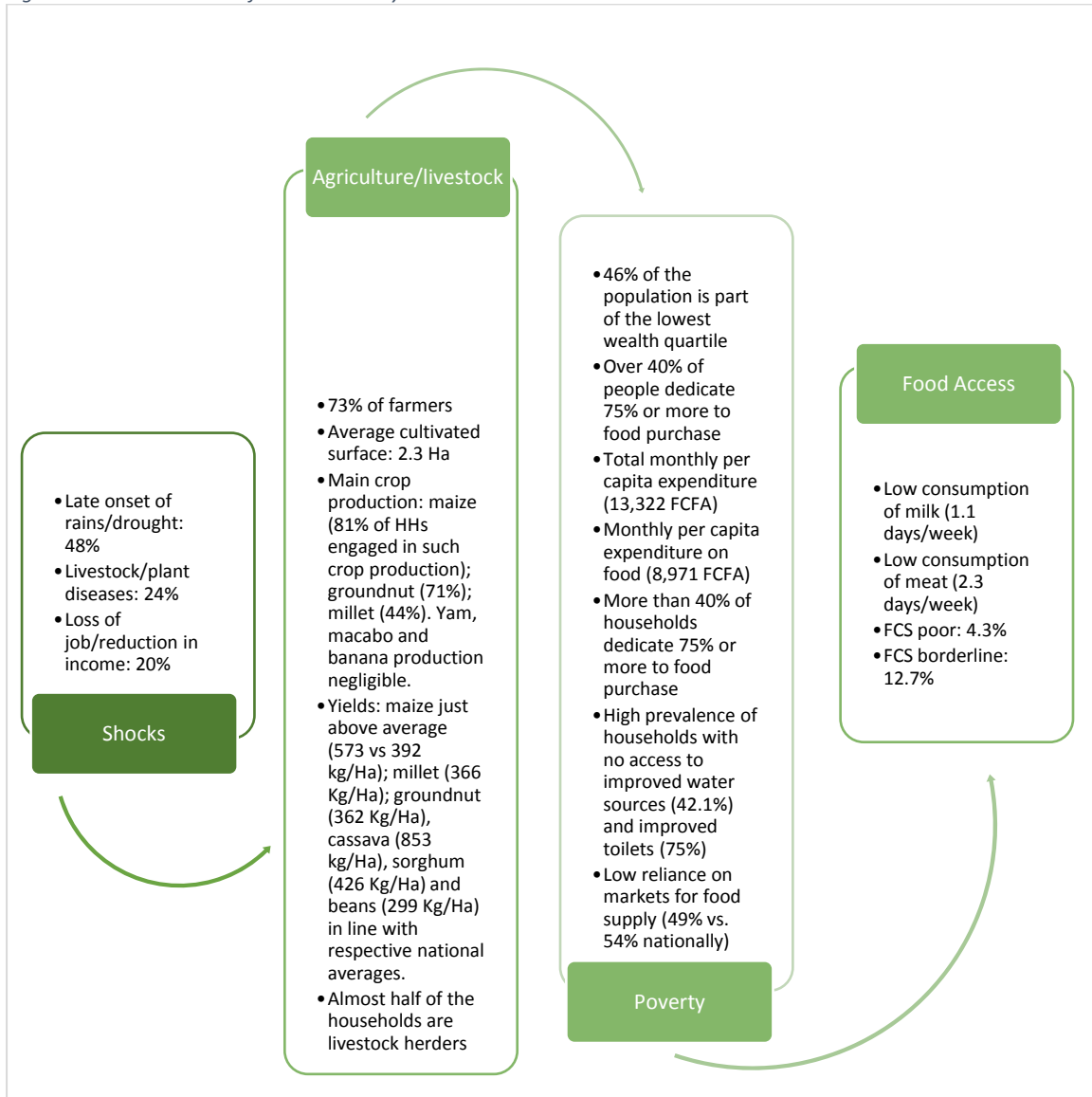


Figure 11: West: Drivers of Food Insecurity



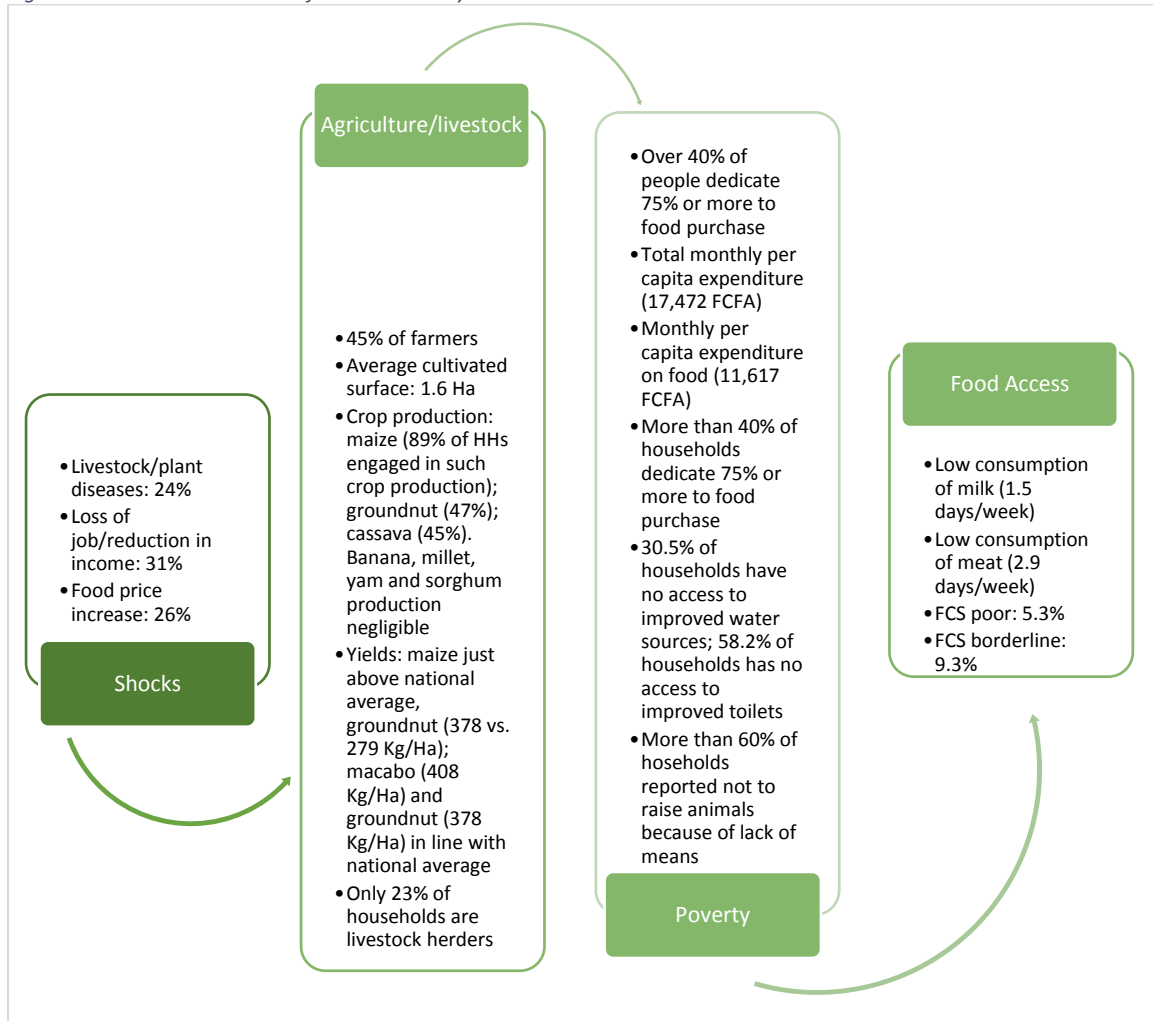
The divisions located in the region of North are also among the poorest, yet the proportion of food insecure households is lower, from 13% in Bénoué to 15.2% in Mayo-Rey.

Figure 12: North: Drivers of Food Insecurity



The region of Adamawa includes the divisions with the lowest proportion of households in the poorest wealth quartiles; however, the food insecurity rates remain high, particularly in Mbéré (28.3%) and Mayo-Banyo (26.4%).

Figure 13: Adamawa: Drivers of Food Insecurity



High rates of poverty were also observed in the divisions located in the region of East (from 21.6% in Lom-et-Djérem to 51% in Kadey); yet, the divisions of Haut-Nyong and Lom-et-Djérem – with the lowest prevalence of households in the poorest quartile – had the highest rates of food insecurity (respectively, 20% and 17.1%).

Table 3: Proportion of households by wealth quintiles and food security status

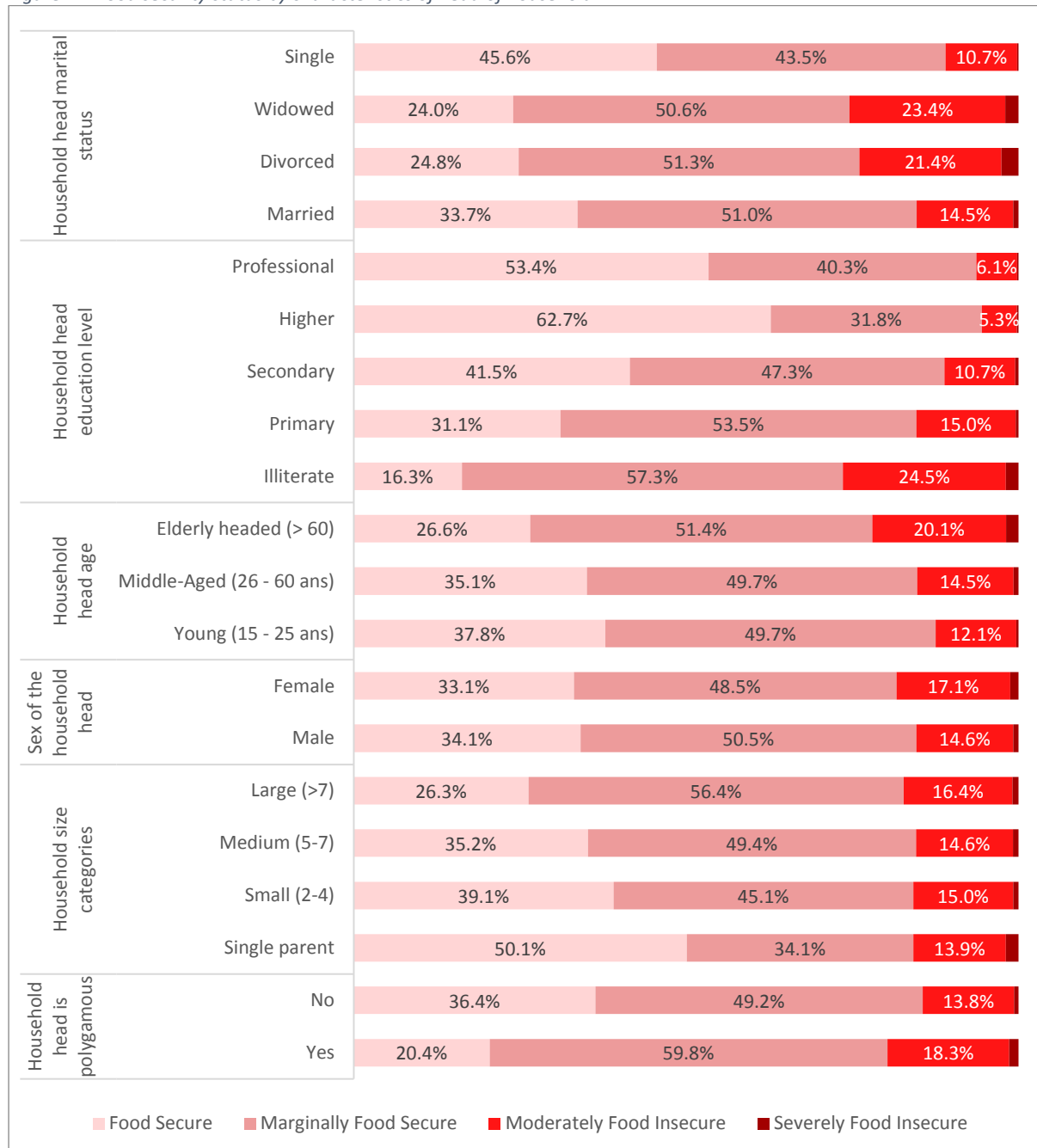
		Wealth Index				Food Security Classification				
		Very Poor	Poor	Middle Income	Better-off	Food Secure	Marginally Food Secure	Moderately Food Insecure	Severely Food Insecure	Food Insecure
Stratum	Douala	0.0%	5.6%	40.2%	54.2%	47.8%	35.8%	16.0%	.4%	16.4%
	Yaoundé	0.0%	5.1%	50.9%	44.0%	56.9%	40.4%	2.5%	.2%	2.7%
	Adamawa	26.1%	35.3%	24.0%	14.6%	23.0%	61.6%	14.4%	1.0%	15.5%
	Centre	10.9%	39.9%	29.4%	19.8%	33.1%	56.0%	10.6%	.4%	10.9%
	East	35.8%	29.5%	23.5%	11.2%	29.2%	56.3%	14.1%	.4%	14.6%
	Far-North	65.5%	22.7%	6.7%	5.1%	13.6%	52.8%	30.7%	3.0%	33.6%
	Littoral	1.5%	25.4%	38.7%	34.4%	36.3%	57.8%	5.9%	0.0%	5.9%
	North	46.7%	28.9%	14.6%	9.9%	22.2%	62.6%	14.3%	1.0%	15.2%
	North West	13.1%	32.3%	28.6%	26.1%	37.1%	44.8%	18.0%	.1%	18.1%
	West	3.0%	36.4%	42.0%	18.5%	31.1%	50.9%	16.8%	1.2%	18.0%
	South	3.4%	26.5%	36.0%	34.2%	41.3%	51.7%	6.9%	0.0%	6.9%
	South- West	2.4%	24.7%	42.7%	30.2%	46.3%	40.8%	12.3%	.5%	12.9%
Divisions with refugees	Djérem	30.4%	38.4%	19.1%	12.2%	14.5%	67.8%	15.2%	2.5%	17.7%
	Faro-et-Déou	26.6%	51.5%	14.6%	7.3%	24.2%	73.0%	2.4%	.4%	2.8%
	Mayo-Banyo	40.6%	44.3%	12.2%	2.9%	9.9%	63.7%	24.1%	2.3%	26.4%
	Mbéré	31.4%	40.0%	19.8%	8.7%	25.8%	45.9%	28.3%	0.0%	28.3%
	Vina	15.6%	24.4%	35.0%	25.0%	30.2%	62.6%	6.6%	.6%	7.2%
	Boumba-et-Ngoko	45.4%	31.0%	16.8%	6.9%	26.7%	67.1%	5.8%	.4%	6.2%
	Haut-Nyong	39.6%	35.0%	18.6%	6.9%	28.3%	51.6%	19.6%	.4%	20.0%
	Kadey	51.0%	26.3%	14.8%	8.0%	30.3%	59.9%	9.8%	0.0%	9.8%
	Lom-et-Djérem	21.6%	27.9%	33.6%	16.9%	29.9%	53.0%	16.4%	.7%	17.1%
	Diamaré	45.3%	24.5%	15.4%	14.9%	20.2%	48.0%	30.6%	1.2%	31.8%
	Logone-et-Chari	56.4%	33.7%	5.1%	4.9%	7.3%	80.1%	12.0%	.5%	12.6%
	Mayo-Danay	81.4%	11.7%	5.7%	1.2%	16.9%	55.5%	21.1%	6.5%	27.6%
	Mayo-Kani	75.2%	19.5%	3.0%	2.3%	17.5%	65.9%	14.7%	1.9%	16.6%
	Mayo-Sava	66.5%	25.1%	5.8%	2.6%	8.2%	54.0%	34.3%	3.5%	37.8%
	Mayo-Tsanaga	75.9%	22.3%	1.6%	.2%	8.3%	26.1%	61.2%	4.4%	65.6%
	Bénoué	36.5%	28.1%	21.1%	14.2%	25.3%	61.7%	12.3%	.7%	13.0%
	Faro	64.5%	22.6%	8.9%	4.0%	23.9%	56.5%	18.6%	1.0%	19.6%
Mayo-Louti	52.9%	33.9%	7.8%	5.3%	17.3%	63.4%	17.7%	1.5%	19.3%	
Mayo-Rey	62.5%	26.1%	6.4%	5.0%	19.3%	65.5%	14.2%	1.0%	15.2%	

6.3 Who are the most vulnerable to food insecurity?

Food security status varied according to key characteristics of the head of household. Figure 14 provides a summary of these variations. The higher the education level of the head of household, the better the household's food security status. Indeed, households whose heads are illiterate – followed by households whose head has only completed primary school – tend to be more severely and moderately food insecure than households whose heads completed secondary or higher education. Female-headed households are slightly more food insecure compared to male-headed households (18.4% vs. 15.4% of male-headed households). In terms of household size, households with one or two members are slightly more food insecure than larger households.

On the marital status of the head of household, higher rates of moderate and severe food insecurity can be observed among households whose head is polygamous: the prevalence of food insecurity among households with polygamous heads is higher than that of households whose head has only one spouse (19.7% vs. 14.4%).

Figure 14: Food security status by characteristics of head of household



No significant difference in the prevalence of food insecurity was noticed between households practicing cash crop agriculture (16%) and those who did not practice it (16%). Conversely, subsistence farming is generally more associated with food insecurity as a much higher proportion of those practicing food-crop farming is exposed to food insecurity (20%) compared to non-farmers (12% only). This is particularly evident in Far North, where 39% of farmers are food insecure compared to 18% of those not depending on farming. The only exceptions to this are the highly productive regions of

Centre and West, where 9% and 17% of food-crop farmers are food insecure compared to 14% and 21% of non-farmers, respectively.

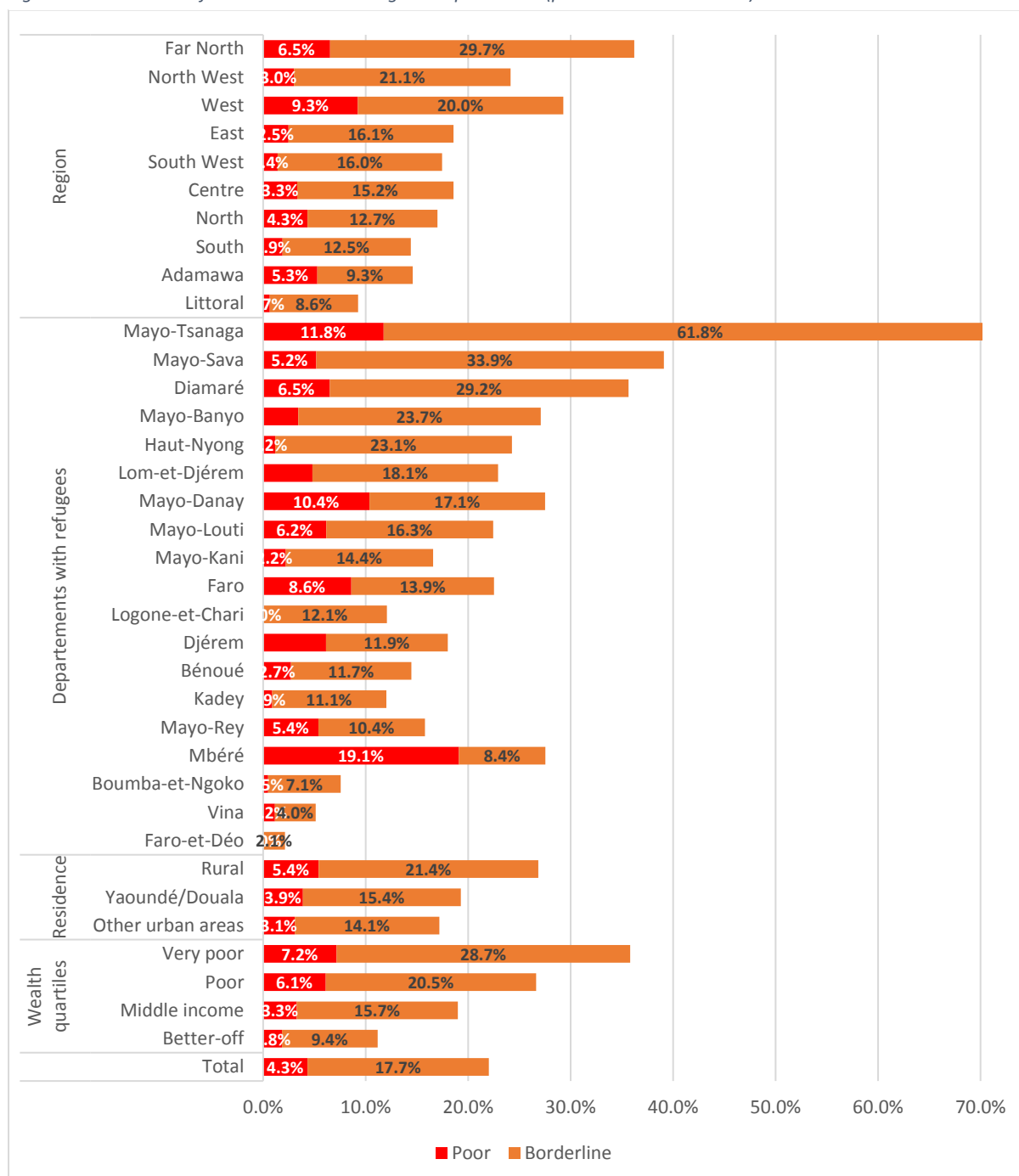
Overall, 18.9% of households who raise animals are food insecure compared to 14.8% of who do not do this activity. At the regional level, this is also the case in Far-North, where 38.2% of households who are involved in livestock production are food insecure compared to 27.4% of households who do not raise animals.

6.4 Food Consumption and dietary diversity

6.4.1 Food Consumption Score

The food consumption score (FCS), combined with other indicators, can be used as a proxy to measure the overall food security status at the household level. The FCS is calculated from the types of foods

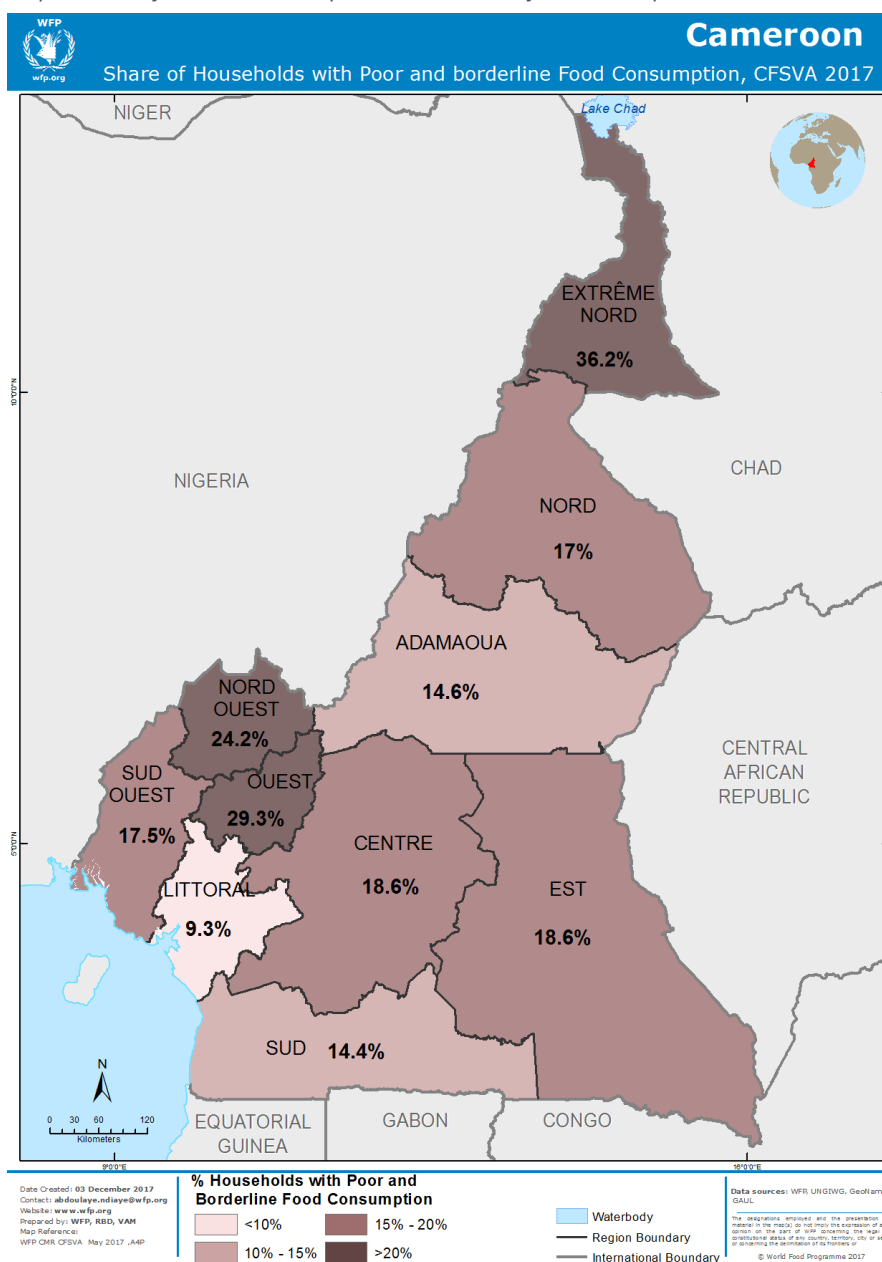
Figure 15: Prevalence of households consuming inadequate diets (poor and borderline FCS)



and the frequencies with which they are consumed during a seven-day period. Based on their score, households are then classified into three consumption categories: poor (FCS= ≤ 21); borderline ($21 < \text{FCS} \leq 35$); and acceptable consumption (FCS= ≥ 35)¹. Those with poor and borderline food consumption are grouped and classified as having inadequate food consumption.

Figure 15 above presents the percentage of households with poor and borderline food consumption by region, place of residence, wealth quartile. Overall, more than 1 in 5 households (22%) have inadequate food consumption, with 4.3% of them consuming a poor diet and 17.7% consuming a borderline diet. A higher percentage of households in rural areas (26.8%) have inadequate diets compared to those in Yaoundé and Douala (19.3%) and in other urban areas (17.2%). In terms of wealth, the available budget allocated on food seems to affect dietary habits and the overall quality of the diet consumed by households. Indeed, the proportion of households with inadequate food consumption decreases as the wealth of the household increases. Differences by wealth quartile are

Map 2: Share of households with poor and borderline food consumption



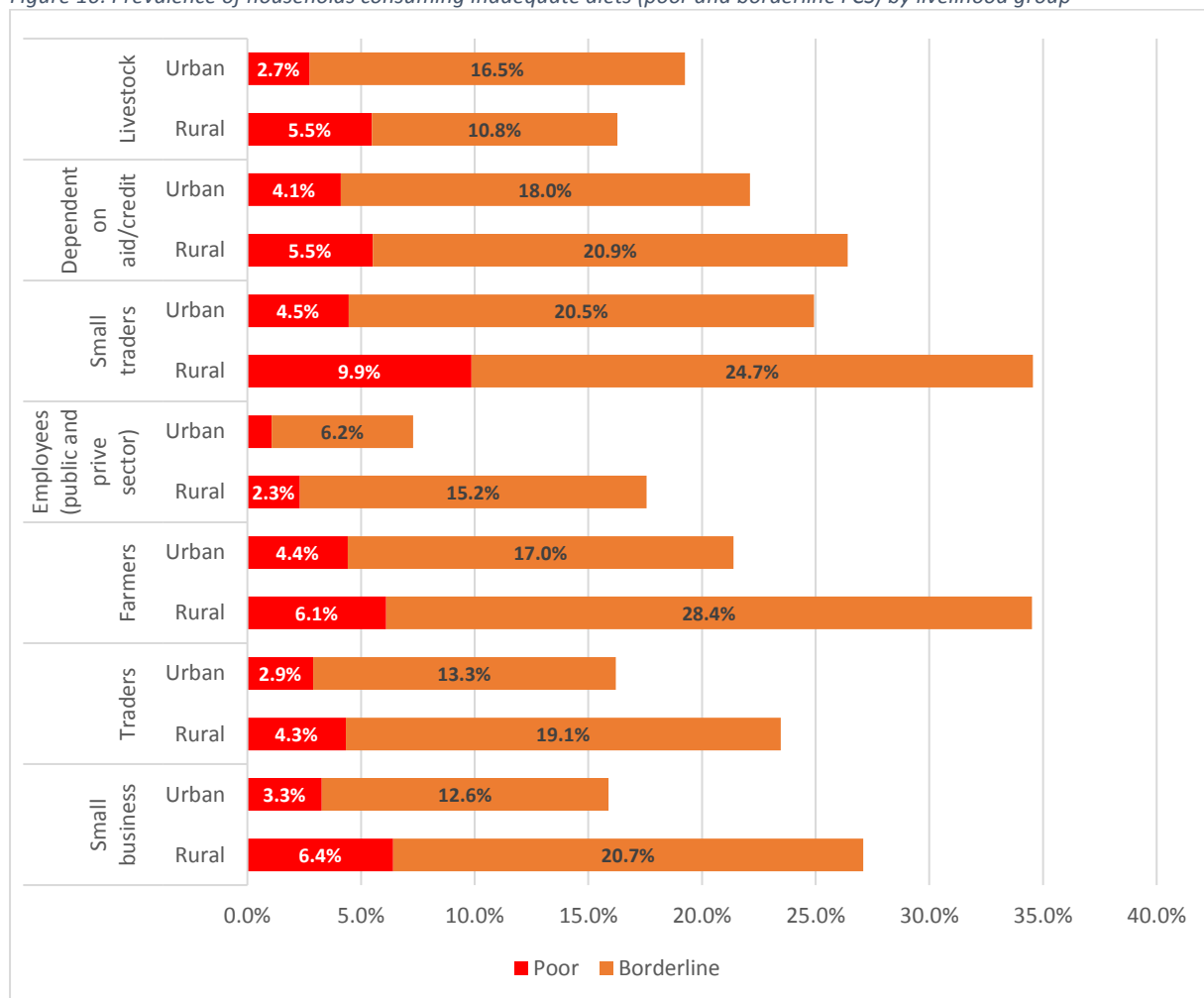
stark: 11.2% of households in the highest wealth quartile have inadequate food consumption compared to 35.8% of household in the lowest wealth quartile.

West – the region with one lowest prevalence of households who rear livestock or are engaged in fisheries – has the highest percentage of households consuming a poor diet (9.3%) followed by Far North (6.5%) and Adamawa (5.3%). At the divisional level, Mberé and Mayo-Tsanaga– located in the regions of Adamawa and Far North – have the highest prevalence of poor food consumption. Mayo-Tsanaga is also the division with the highest prevalence of households consuming inadequate diets. The situation of the division of Mberé can be

explained by the high presence of internally displaced populations (IDPs), accounting for one of the most vulnerable segments of the population; rural areas in Mayo-Tsanaga – a division with a high density of IDPs fleeing Nigeria – has also been recently troubled by climatic hazard and recurrent attacks by the terrorist group Boko Haram, which affected local productivity and availability of food on markets.

The rural-urban gap in food consumption is also reflected across livelihood groups: regardless of their main source of revenue, urban households consume better diets than their rural counterparts. For instance, poor diets are consumed by a wider percentage of rural households depending on small trade (9.9% vs. 4.5% of their urban counterparts). Urban households have better access to markets, which are supplied with various types of products throughout the entire year; conversely, rural markets offer main staples, while often lacking micronutrient-rich foods (such as eggs and fruits). Being markets the main source of foods both in rural and urban areas, local differences in food availability affect food consumption of rural and urban households.

Figure 16: Prevalence of households consuming inadequate diets (poor and borderline FCS) by livelihood group

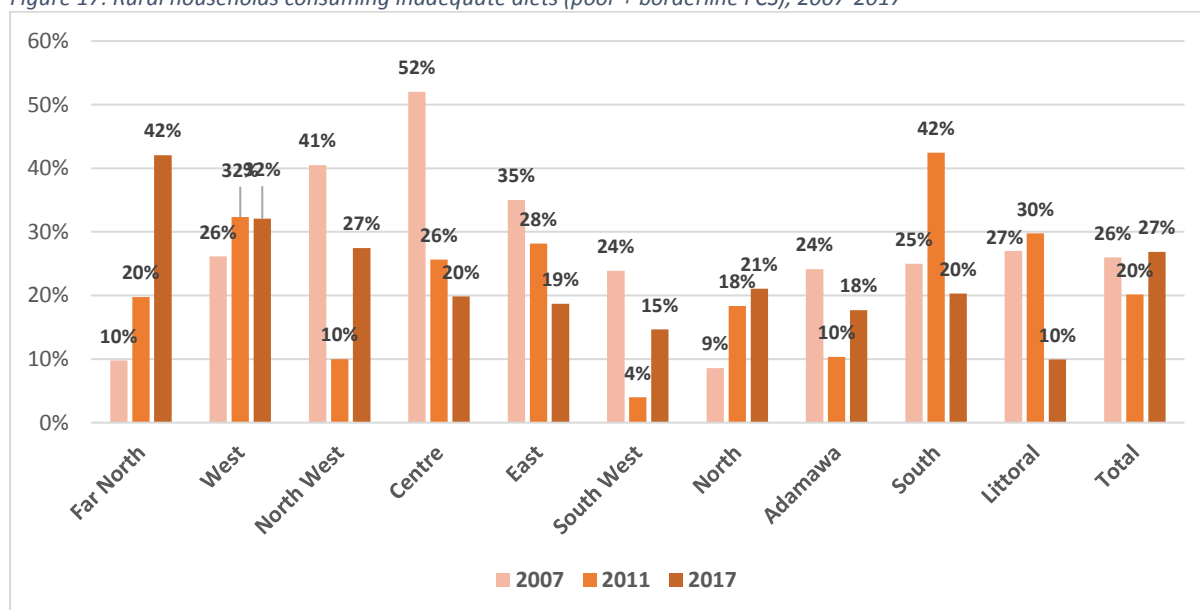


6.4.1.1 Trends¹⁴

Compared to 2011, food consumption has deteriorated, showing a 35% increase in the number of households consuming inadequate diets. Despite the increase, such prevalence does not reach the 2007 levels, where 26% of households consumed an inadequate diet.

From 2007, the region of North saw an increase in the proportion of households with inadequate consumption; whilst, in Far-North, the proportion of households consuming inadequate diets doubled compared between 2011 and 2017. The regions of Littoral, East and South saw a drop in households consuming inadequate diets.

Figure 17: Rural households consuming inadequate diets (poor + borderline FCS), 2007-2017



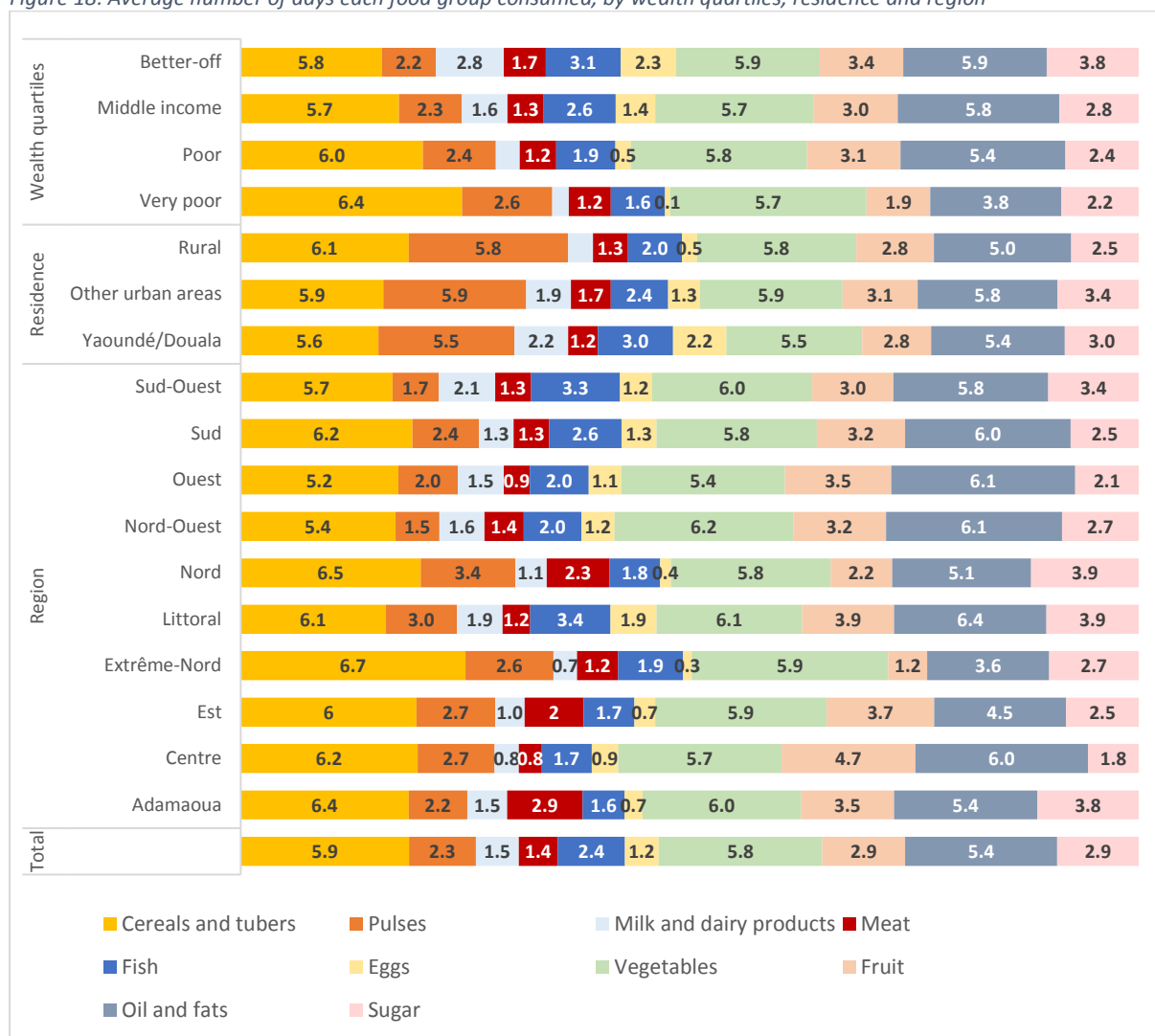
6.4.2 Food Dietary Diversity

The average diet consumed by Cameroonian households is poorly diversified. Figure 18 presents the average number of days that different food groups are consumed by households' wealth quartile, residence and region. The diet of Cameroonians is mainly made of cereals, tubers, vegetables, oil and fats (which are consumed almost daily). Deficiencies can be observed in the consumption of meat, fruit, pulses, milk and dairy products, which are essential sources of micronutrients and protein. Such deficiencies are common across all surveyed regions and divisions. In terms of wealth, better-off households consume more diversified diets than their poor counterparts; however, the consumption of milk and dairy products remains sporadic among better-off households as well (only 2.8 days per week).

Rural households consume less diversified diets than urban households. The same trend can be seen between urban and rural livelihood groups: although they rely on the same income generating activities, rural households have less diversified diets than their urban counterparts.

¹⁴ To make a sound comparison between 2007 and 2001, the trends shown in this and subsequent section describe the evolution of the prevalence of different food security indicators in rural areas (the 2007 CFSVA only covered rural households).

Figure 18: Average number of days each food group consumed, by wealth quartiles, residence and region



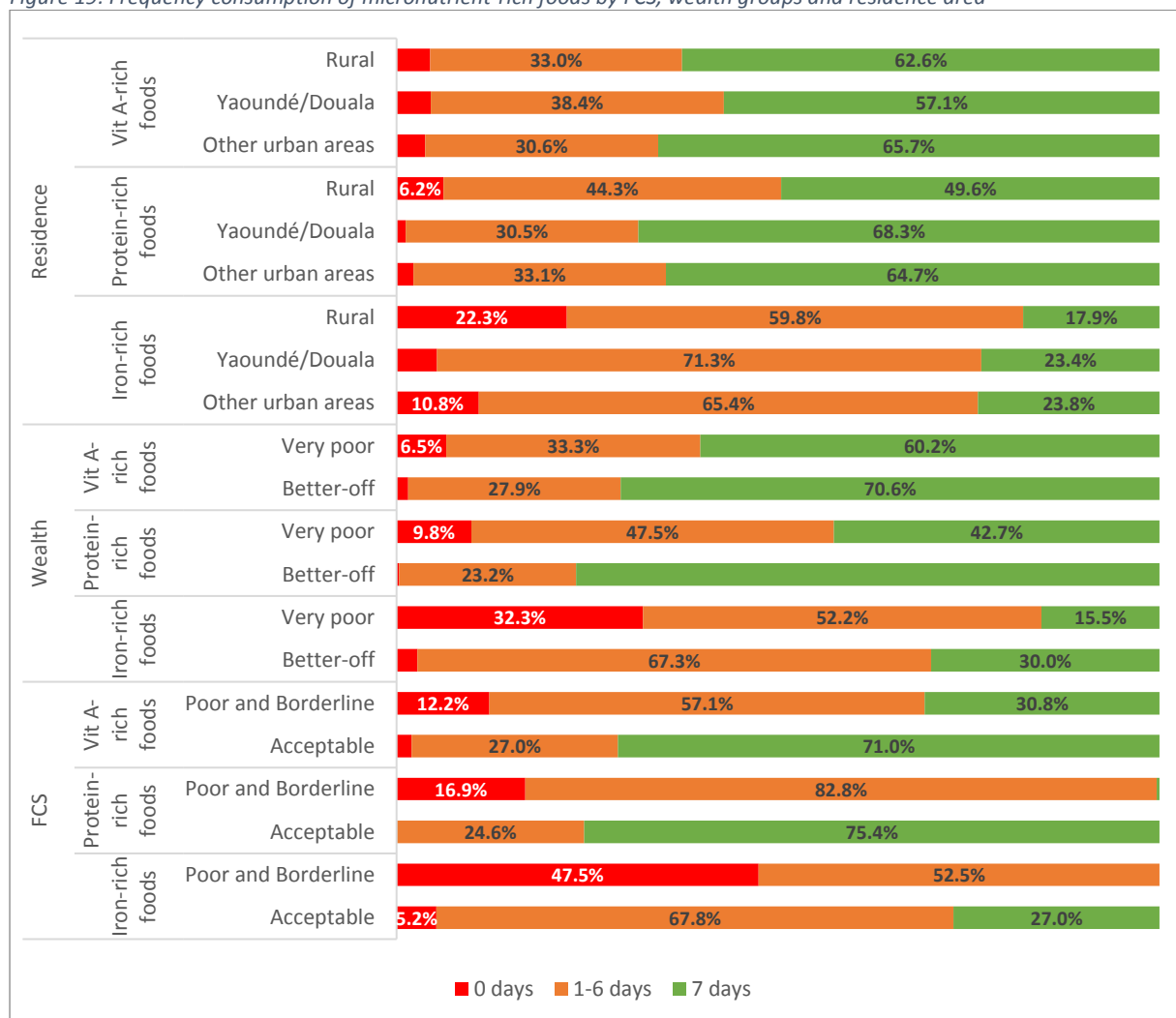
6.4.3 Food Consumption Score Nutrition (FCS-N)

The Food Consumption Score-Nutrition (FCS-N) helps to understand household level nutrient adequacy and attempts to improve the link between household food access/consumption and nutritional outcomes. The FCS-N uses data derived from the FCS module to provide information on three specific nutrients: hem iron, vitamin A and protein.

Most households with poor or borderline food consumption rarely eat protein and vitamin A-rich foods and are, therefore, likely not be consuming enough to meet their nutrient needs. Iron-consumption patterns show an alarming situation for households with inadequate food consumption: almost half of them never consume iron-rich foods on a weekly basis, risking becoming more prone to iron-deficiencies or conditions such as anemia. The same trend can be observed between wealth groups: better-off households – who consume more diversified diets – eat micronutrient-rich foods more frequently than poor households do. Furthermore, iron-rich foods are the least-frequently consumed among poor households (32.3% of them never eats this type of foods on weekly basis). Rural more than urban households do not eat enough protein-rich foods. Despite peaks in rural areas, all surveyed households – both rural and urban ones – sporadically consume iron-rich foods. At the regional level, iron deficiencies are more pronounced in the regions of Far-North, Centre and West –

where the percentage of households who never consume iron-rich foods is 35.6%, 20.1% and 19.1%, respectively. Far-North also includes the highest proportion of households who never consume protein (9%) and vitamin A-rich foods (6.4%).

Figure 19: Frequency consumption of micronutrient-rich foods by FCS, wealth groups and residence area



6.5 Food Sources

Across all regions, the main source of all food items is market purchase. Far-North, East and North – the regions with the highest prevalence of households falling in the lowest wealth quartile – are among those with a lower dependence on markets. The divisions with a higher share of households in the highest wealth quintiles – such as Vina and Lom-et-Djérem – are more dependent on markets. In rural areas, the proportion of households depending on markets is still high (43.8%), yet it is lower than that of households located in urban areas (57.7%) or in the cities of Yaoundé and Douala (97.8%). Transfers from migrated household members also account for an important food source, particularly in the regions of Centre and North, where one household out of five reported this as main source of the food in the last seven days before the survey.

Table 4: Main sources of cereals and tubers

		Region											
		Adamawa	Centre	East	Far North	Littoral	North	North West	West	South	South West	Douala	Yaoundé
Cereals: main food source	Own production	17.1%	5.0%	4.7%	46.8%	10.6%	44.1%	32.8%	23.9%	0.7%	4.0%	0.5%	0.4%
	Fishing/Hunting/Collecting	0.1%	0.0%	0.4%	1.3%	0.1%	0.0%	0.5%	0.4%	0.3%	0.3%	0.2%	0.0%
	Borrowing/Barter	0.1%	0.1%	0.2%	0.2%	0.4%	0.0%	0.3%	0.2%	0.3%	0.5%	0.8%	0.2%
	Purchase	81.2%	92.5%	91.8%	49.4%	88.5%	54.3%	65.1%	71.9%	97.6%	94.2%	97.9%	98.7%
	Work for food	0.1%	0.2%	0.0%	0.2%	0.0%	0.2%	0.5%	0.1%	0.3%	0.3%	0.0%	0.0%
	Family donation/transfers	1.4%	2.1%	1.7%	1.5%	0.5%	1.4%	0.7%	3.5%	0.8%	0.7%	0.5%	0.7%
	Food aid (NGOs etc.)	0.0%	0.0%	1.3%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Tubers: main food source	Own production	22.7%	57.4%	54.0%	4.5%	50.9%	7.8%	39.8%	42.3%	51.5%	48.4%	1.5%	2.7%
	Fishing/Hunting/Collecting	1.5%	2.4%	1.2%	0.8%	0.0%	0.0%	0.4%	0.8%	0.5%	2.6%	0.7%	0.0%
	Borrowing/Barter	0.6%	0.0%	0.4%	0.7%	0.2%	0.1%	0.6%	0.3%	0.2%	0.3%	1%	0.7%
	Purchase	72.1%	30.9%	41.0%	89.5%	45.7%	88.0%	56.1%	50.0%	43.8%	46.3%	96%	89.4%
	Work for food	0.5%	0.0%	0.2%	0.0%	0.0%	1.0%	1.9%	0.5%	0.0%	0.2%	0.0%	0.0%
	Family donation/transfers	2.6%	9.3%	2.9%	4.5%	3.1%	3.0%	1.1%	6.0%	3.9%	2.3%	0.9%	7.2%
	Food aid (NGOs etc.)	0.0%	0.0%	0.2%	0.0%	0.1%	0.2%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%

In rural areas, own production accounts for the main food source for cereals and tubers. In terms of cereals consumption, 33.7% rural households reported to produce the cereals they consume against 13.2% of households located in urban areas and 0.5% of households in Yaoundé and Douala. Focusing on tubers, 58.5% of rural households produce tubers they consume against 24.4% of urban households and 2.1% of households located in Yaoundé and Douala.

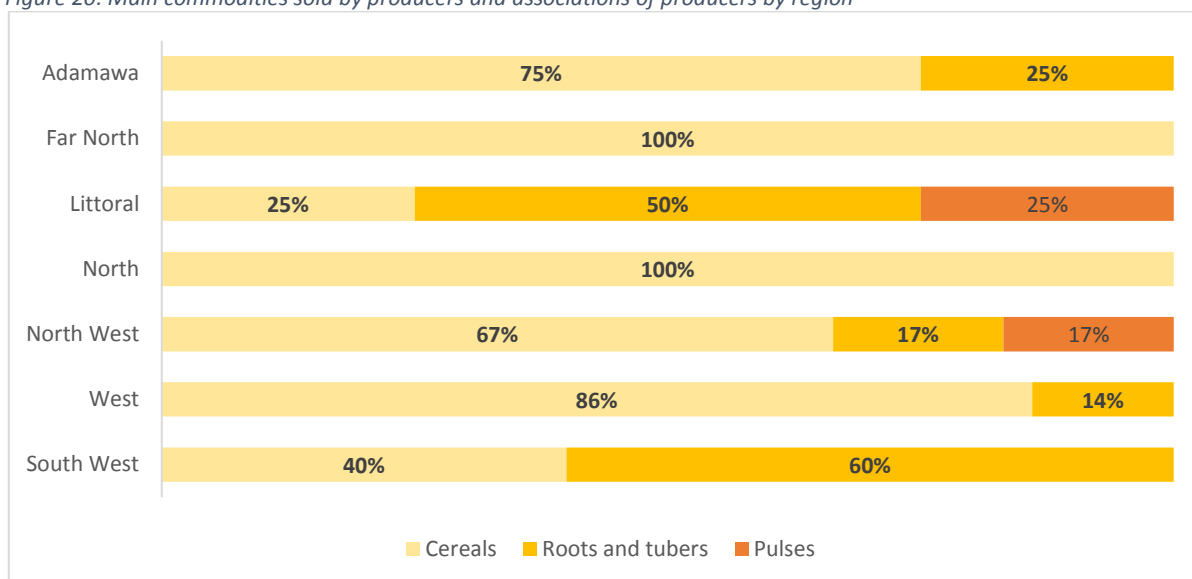
6.6 Food security and markets

6.6.1 Food commodities, sources, and availability

Overall, more than half of Cameroonian households (53.9%) rely on markets to satisfy their dietary needs, therefore it is important to understand the volumes of commodities sold by producers. According to the market assessment, the main commodities sold on markets are cereals (71% of all commodities), followed by roots and tubers (24%) and pulses (6%). This prevalence is higher in the regions of Far North (100%, where cereals represent the primary commodity sold by all producers), West (86%), Adamawa (75%) and North West (67%). Roots and tubers represent the primary commodity sold by producers in the region of South West (60%), Littoral (50%).

Other foods available on markets such as tomatoes, onions, garlic, fruits and vegetables are important cash crops.

Figure 20: Main commodities sold by producers and associations of producers by region

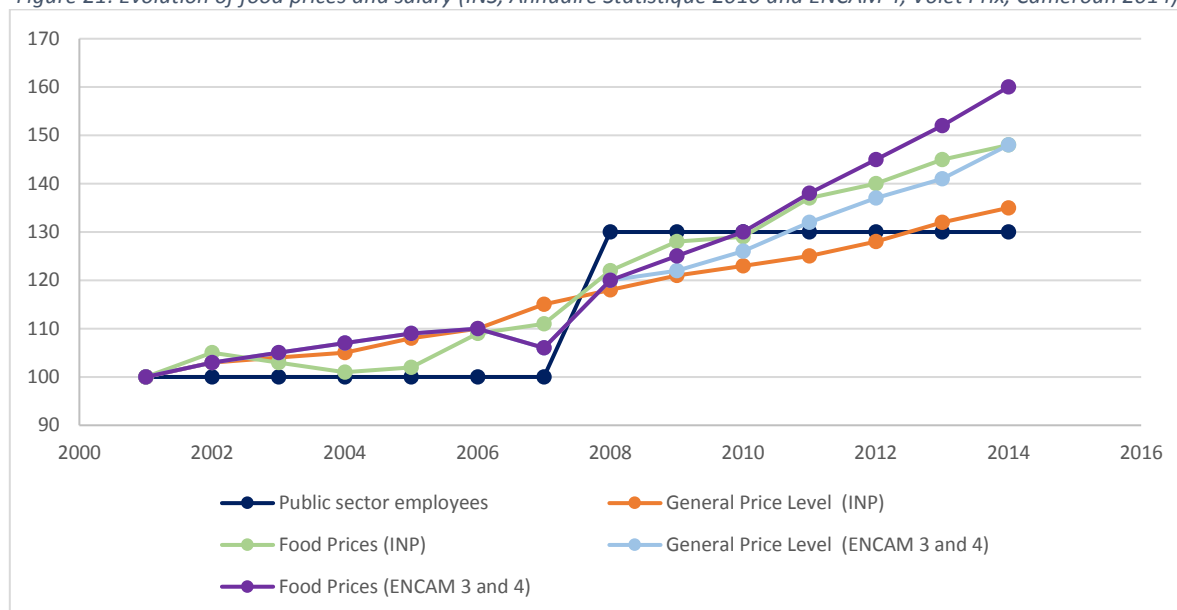


Most food items are available in rural markets; however, their availability is highly influenced by the level of supplies, which varies with the harvest of each product. This situation has an impact on prices and it is more pronounced in areas characterized by unimodal rainfall (which means one agricultural season per year), than in bimodal areas. The presence of refugees – who account for one of the most vulnerable segments of the population – puts further pressure on markets that are already subject to seasonality and climate shocks: with an increase in prices due to scarcity, commodities available on markets risk to become unaffordable for most households. With shortages in supplies and a significant increase in commodity prices, the Great North and the region of East – which account for the areas including the highest shares of poor population¹⁵ – are expected to experience this situation.

Prices and food availability in urban markets are also subject to productivity, which, depending on the season, might result in periods of abundance and of scarcity. However, urban sellers rely on different supply channels, which explains why urban markets seldom experience food shortages. The main concern in urban areas is the fact that the population is mainly made of employees, who satisfy their consumption needs almost exclusively on markets. The fact that their market power is below the general price level is hampering their access to food, which, in the long run might have an impact on their level of food security.

¹⁵ [ECAM 4](#)

Figure 21: Evolution of food prices and salary (INS, Annuaire Statistique 2010 and ENCAM 4, Volet Prix, Cameroun 2014)



Other than raw materials, the majority of commodities sold in rural markets – such as processed foods – come from neighboring regions. In the north of the country, rural market flows follow the seasonality of production: the harvest season is characterized by outflows to urban areas; conversely, the lean season is characterized by inflows.

Urban markets are important centers for exchanges. Inflows of imported goods supply retail markets; conversely, outflows of wholesale products feed national needs and exports.

In the south of the country, raw materials supply markets located in nearby villages or are exported to neighbor countries. For instance, fruits and vegetables produced in Foubot are sold in the cities of Bafoussam, Yaoundé, Douala or are exported to Gabon and Equatorial Guinea and Nigeria. Together with other factors, this flow of foodstuff that feeds consumption needs of neighboring countries is thought to affect the food security of the regions of West and North West.

Indeed, it is interesting to notice that landlocked divisions are more food secure than divisions that are well connected with neighboring regions or countries. For instance, in the region of East divisions such as Kadei and Boumba are more food secure than divisions located along the main road networks (e.g. Lom-et-Djérem and Haut Nyong). The axis Bamenda-Mamfé-Nigeria seems to be a threat to food security: if local producers prioritize foreign consumption over domestic consumption, even subsidized crops such as rice Ndop might be cultivated to satisfy the consumption needs in Nigeria. The division of Mayo Banyo (the most food insecure division in the region of Adamawa) might have experienced similar conditions: it seems that high proportions of the maize produced are used to feed the demand from Nigeria or as forage for poultry reared in the region of West.

6.6.2 Infrastructure and services for food trade

6.6.2.1 Trader Access

According to the market assessment, the structure of rural markets in the north of the country is different from those located in the south. In southern Cameroon, permanent structures for the food trade were observed in all the hub-markets; conversely, markets in the north have no permanent structures, and traders usually build temporary structures made of wood and straw. Rural markets lack warehouses, sources of water, sanitation facilities and electricity. Moreover, roads connecting to marketplaces are often closed or impassable, particularly during the rainy season. Indeed, more than

40% of rural markets are not accessible throughout the entire year, making rural populations more vulnerable to food insecurity.

Urban households meet their food needs in retail markets, which are situated in the district, division and regional capitals. Most urban markets are permanent structures; however, they lack warehouses to stock fresh products, such as fruits and vegetables. Such markets are accessible via asphalt roads or secondary roads that are in good condition throughout the entire year.

With the exception of Ebolowa, Buéa and Bertoua, wholesale markets can also be found in regional and divisional capitals. These markets have warehouses and there are offices that are in charge of the management of the market place.

6.6.2.2 Consumer Access

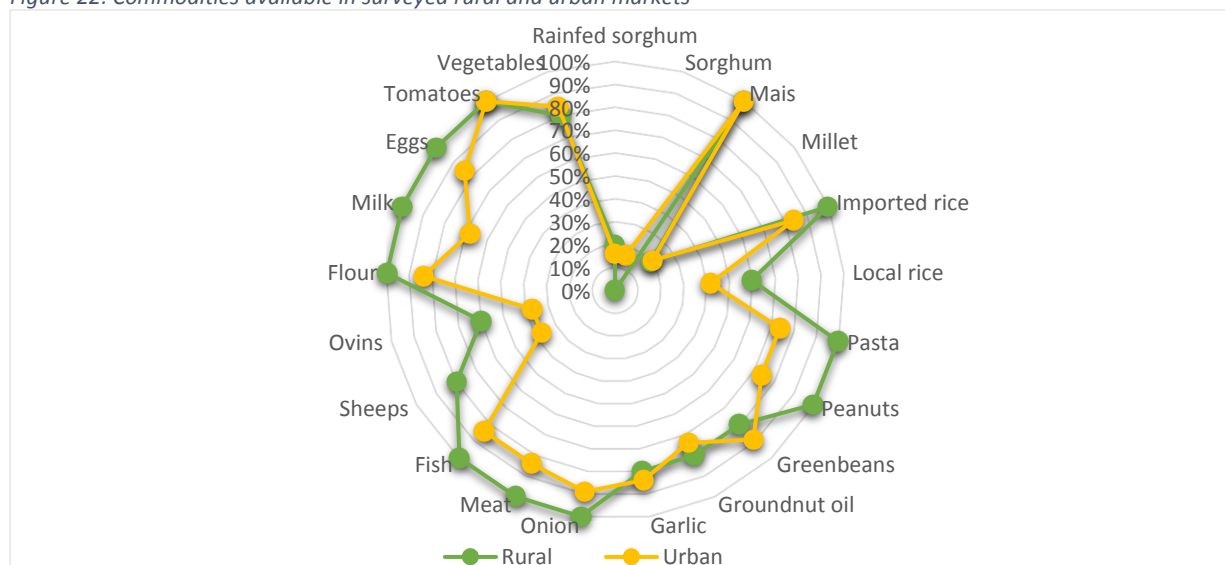
Distance to the marketplace is an important factor behind how often a household purchases food from the main market. Overall, the average distance from a village to the main market is 4.73 kilometers, but there are significant regional variations. The regions recording the highest distance between the main market and the village are South (8.49 km), Adamawa (6.9 km) and East (5.59 km). In general, the closer the household is to a regional capital and urban settlement, the less the distance is to the main market: rural villages are on average 7 km away from the main market compared to urban settlements such as Yaoundé and Douala where the average distance is 1.3 km.

6.6.3 Main challenges

According to the market assessment, the main challenge to the food trade and overall food access is the availability of a variety of foods at affordable prices, especially for poor rural households. There are significant variations to this across food commodities and regions. The main staples are usually available in rural markets, but the availability and quantity of products such as eggs, fruits and other micronutrient-rich foods is insufficient to cover the dietary needs of rural populations. Moreover, the way in which foodstuffs are processed, packaged and stored do not necessarily meet food safety regulations and hygiene norms.

In the case of price fluctuations or other constraints affecting the food availability, the main difficulties affecting urban households is having access to local cheaper and good quality substitutes. The substitution with less nutritious products is a factor contributing to poor dietary diversity.

Figure 22: Commodities available in surveyed rural and urban markets



6.7 Income sources, wealth and food insecurity

On average, two household members are involved in income-generation activities. Across all regions and places of residence, the male head of household contributes to household income more than female heads. The proportion of female head of households who participate in income-generating activities is small in the regions of North (8.3%) and Far-North (14.4%), in rural areas (17.1%) and among very poor households (13.8%). However, the involvement of women other than the female-heads is more common, especially among female-headed households (82.6%), middle-income and better-off households (respectively 52.3% and 54.7%) and urban households (60.2% in Yaoundé and Douala and 49.9% in other urban centers). Despite the small prevalence, children also contribute to household's income, particularly in the regions of South West (6.7% of households), North West (5.8%) and among female-headed households (6.6%).

Regardless of their wealth, most household have more than two income sources; however, the number of households depending on more than two income sources decreases as the wealth of the household increases, from 77.2% of very poor to 69.7% of better-off households. At the regional level, most households who depend on more than two income sources are in Far North (81.1%), North (70.7%), Centre (72.6%) and Yaoundé and Douala (72.7%).

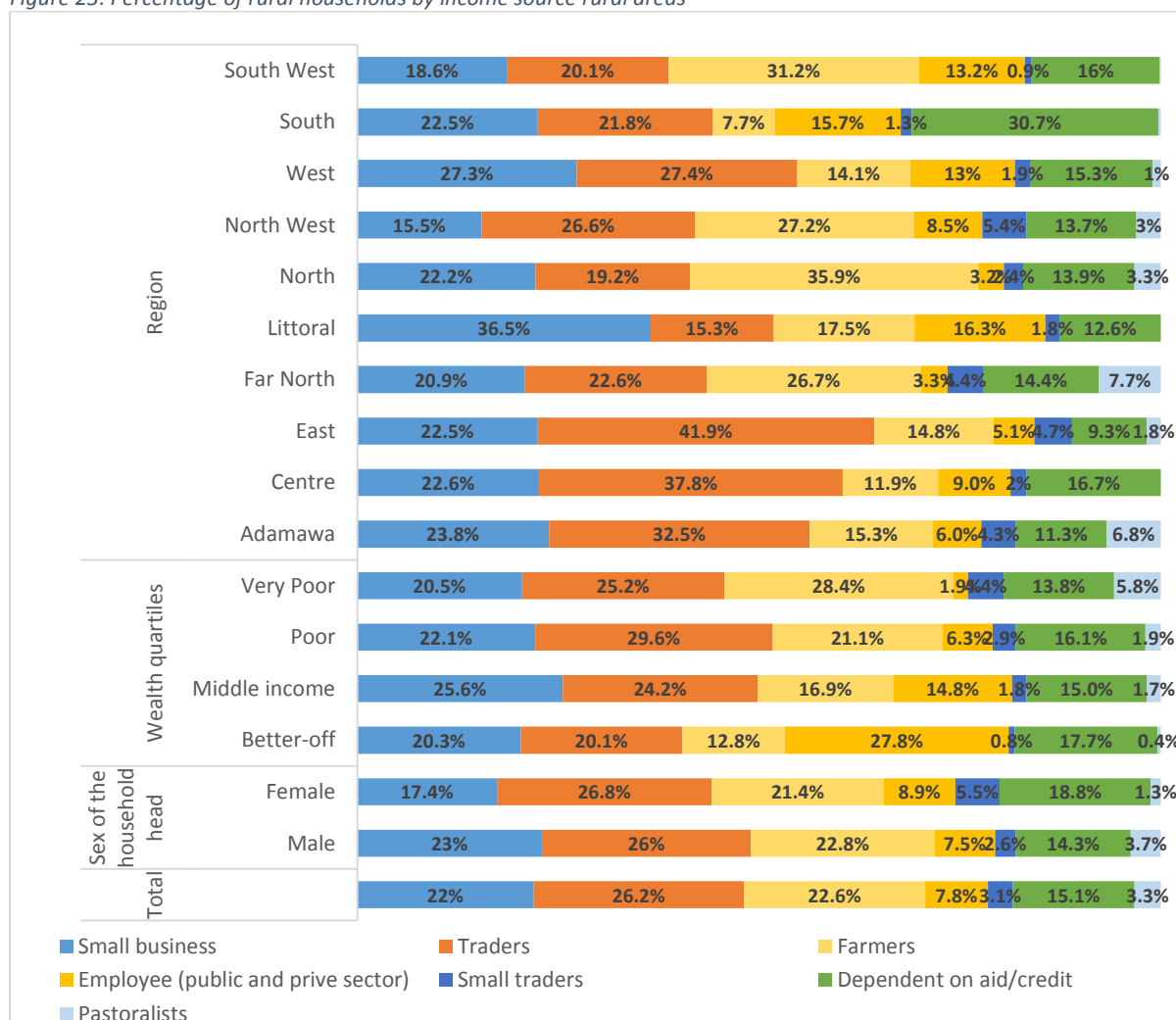
Table 5: Household members engaged in income generation activities and number of income sources

		Household members involved in income generating activities					Number of income sources			
		Male head	Female head	Men	Women	Children	None	One	Two	More than two
Region	Adamawa	84.0%	16.0%	76.7%	35.1%	4.5%	0.0%	11.0%	38.1%	50.9%
	Centre	74.1%	25.9%	69.8%	55.4%	3.9%	0.0%	4.9%	22.5%	72.6%
	East	77.7%	22.3%	64.3%	39.2%	4.3%	0.0%	16.7%	26.7%	56.6%
	Far North	85.6%	14.4%	74.2%	30.7%	4.0%	0.0%	3.8%	15.1%	81.1%
	Littoral	66.7%	33.3%	66.6%	51.4%	4.1%	0.0%	2.9%	28.7%	68.4%
	North	91.7%	8.3%	80.3%	29.5%	2.9%	0.0%	11.7%	17.6%	70.7%
	North West	75.3%	24.7%	69.8%	44.6%	5.8%	0.0%	17.3%	35.1%	47.6%
	West	66.7%	33.3%	63.9%	53.0%	4.3%	0.0%	8.6%	24.5%	66.9%
	South West	77.6%	22.4%	66.6%	47.5%	6.7%	0.0%	6.1%	41.0%	52.9%
Residence	Yaoundé/Douala	68.0%	32.0%	68.2%	60.2%	3.8%	0.1%	7.2%	20.0%	72.7%
	Other urban areas	72.6%	27.4%	70.5%	49.9%	4.3%	0.0%	10.7%	31.1%	58.2%
	Rural	82.9%	17.1%	70.7%	37.4%	4.4%	0.0%	7.7%	22.6%	69.7%
Wealth quartiles	Very Poor	86.2%	13.8%	70.5%	30.1%	3.6%	0.0%	7.4%	15.4%	77.2%
	Poor	75.3%	24.7%	65.6%	42.1%	4.8%	0.0%	8.8%	24.5%	66.7%
	Middle income	71.6%	28.4%	69.4%	52.3%	3.8%	0.1%	9.7%	24.8%	65.4%
	Better-off	74.4%	25.6%	74.6%	57.4%	4.7%	0.0%	7.5%	31.1%	61.4%
Sex of the HHH	Male	100.0%	0.0%	86.5%	34.2%	3.4%	0.0%	7.6%	25.1%	67.2%
	Female	0.0%	100.0%	24.1%	82.6%	6.6%	0.0%	10.9%	23.0%	66.2%
Total		75.9%	24.1%	70.0%	47.0%	4.2%	0.0%	8.5%	24.6%	66.9%

6.7.1 Livelihood groups: rural households

Overall, the most common sources of income for rural households were trade (26.2%), farming (22.6%), small business (22%) and aid/credit (15.1%). A small proportion of households (3.3%) reported raising livestock as a source of income, although it was more prevalent in the north (7.7% of households in Far-North, 6.8% in Adamawa and 3.3% in North) and among very poor households (5.8%). More than a quarter (28.4%) of very poor households in rural areas engaged in farming compared to 12.8% of better-off households. Households located in the north of the country, where dependence on farming and livestock production is greater and where recurrent droughts and floods are common, are more vulnerable to food insecurity.

Figure 23: Percentage of rural households by income source rural areas

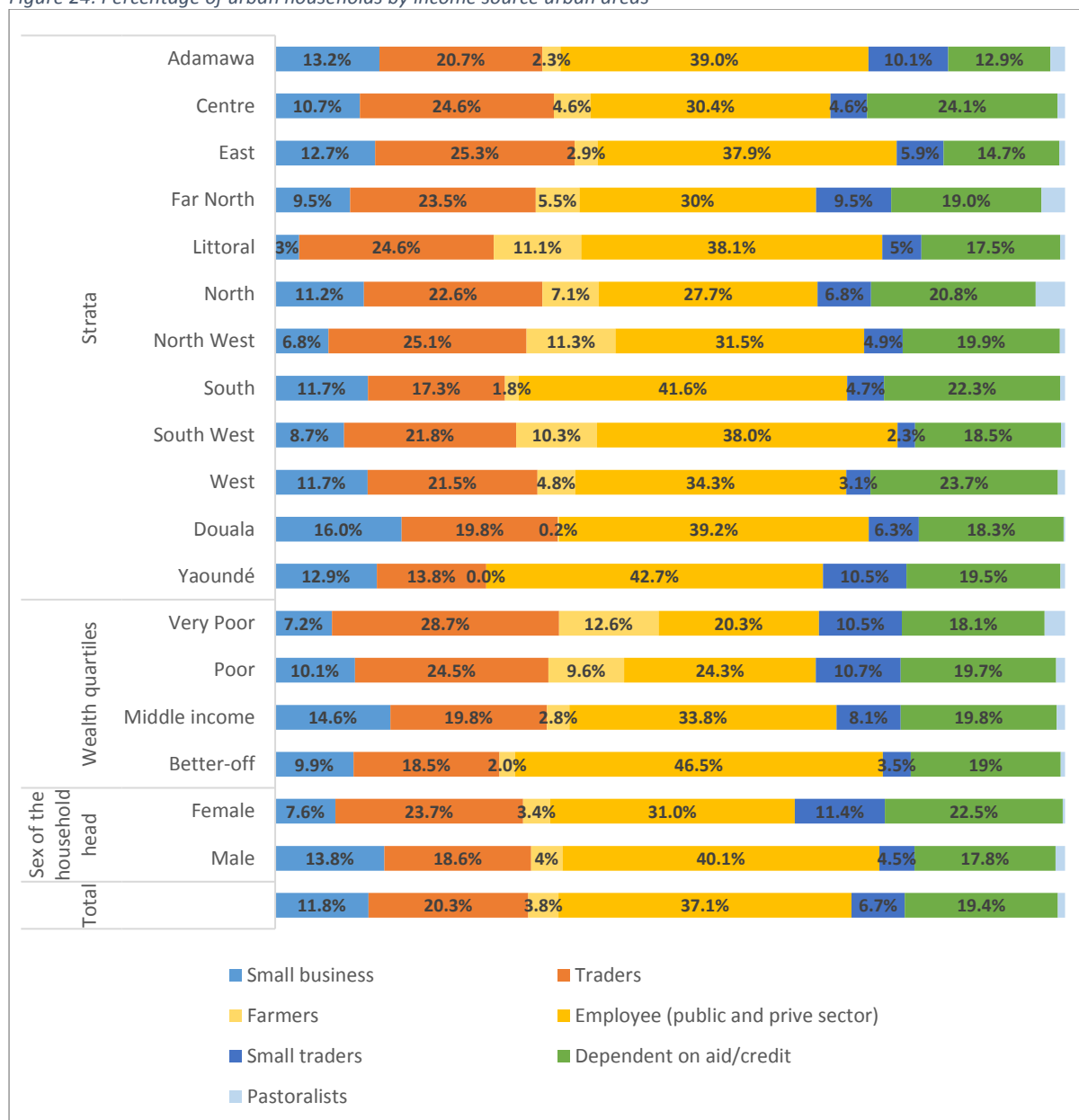


6.7.2 Livelihood groups: urban households

Compared with their rural counterparts, urban households are less dependent on farming and livestock; indeed, most are employed in the public or private sectors (37.1%); depend on trade (20.3%), credit or aid (19.4%) or run a small business (11.8%). Variations in the distribution of income sources can be observed across regions, wealth quartiles and gender of the household head; however, most urban households are employed in the service sector. Such heavy dependence on this source of income implies none or little reliance on own food production, which makes urban households almost

exclusively dependent on the purchase of food in markets, and therefore more vulnerable to inflation and the increased cost of foods.

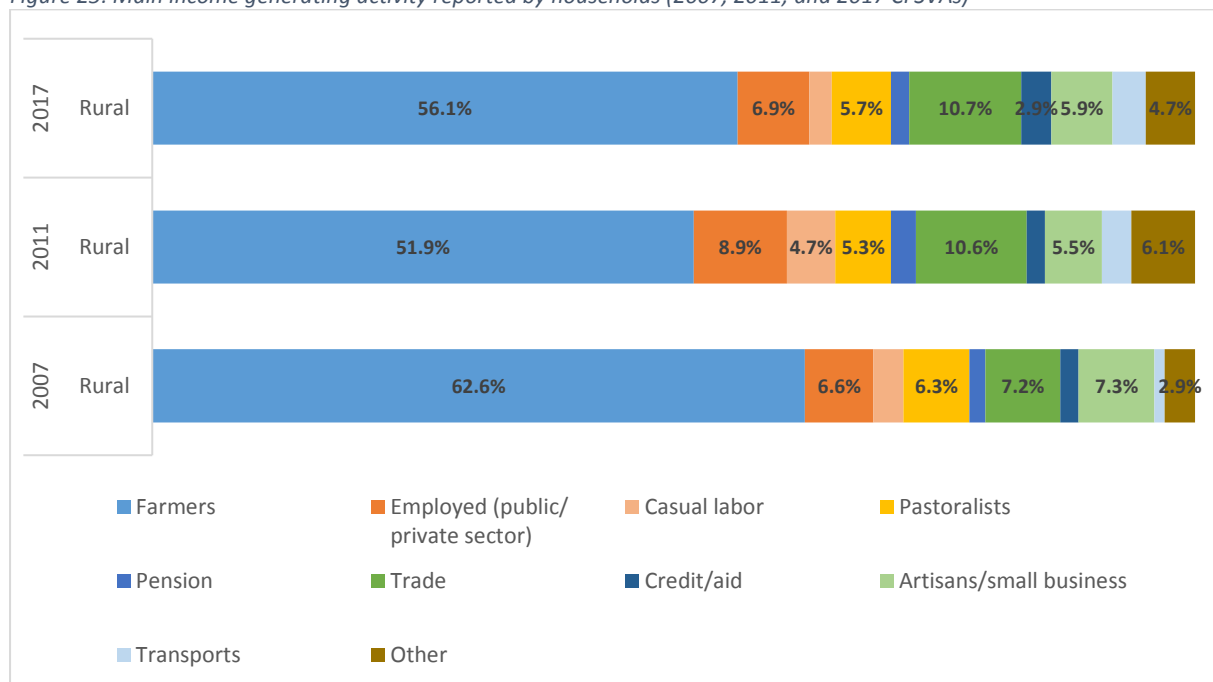
Figure 24: Percentage of urban households by income source urban areas



6.7.3 Trends in main income generating activity

In the last 10 years, the social structure of Cameroon has not seen major changes. Despite a 11% decrease in the number of people reporting agriculture as their primary livelihood, farming remains the main income generating activity for more than half of the Cameroonian population, followed by trade and jobs in the private or public sector).

Figure 25: Main income generating activity reported by households (2007, 2011, and 2017 CFSVAs)

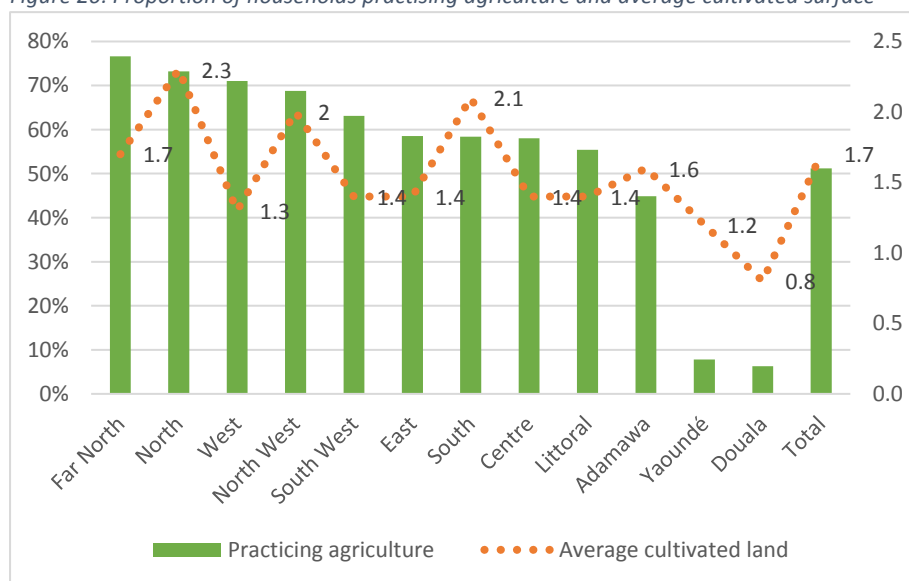


7 AGRICULTURE, LIVESTOCK AND FISHERIES

7.1 Crops

7.1.1 Food crops cultivation

Figure 26: Proportion of households practising agriculture and average cultivated surface

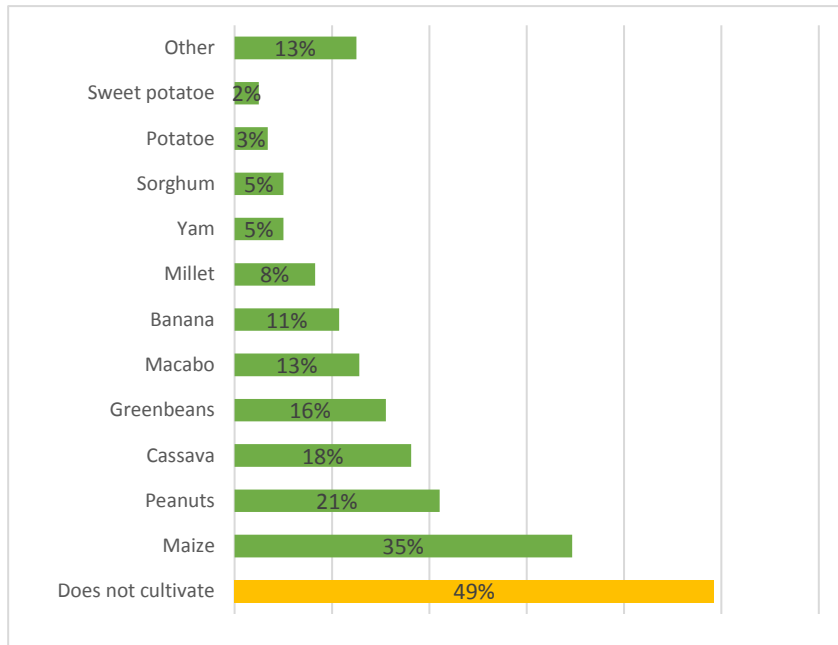


Over half of the population practiced agriculture during the 2016/17 season (51.2%), with highest proportions recorded in Far North, North and West where over 70% of the population are farmers. On average, farmers cultivate a relatively important surface of 1.7 Ha, with peaks in

North (2.3), South (2.1) and North West (2.0). As expected, only a small proportion of the urban population in Yaoundé and Douala are farmers (7%) and the average surface cultivated decreases in these town to 0.99 Ha.

The most common crops produced in Cameroun are maize, groundnuts, cassava and beans. Over two third of farmers cultivate maize, while 41% grow groundnuts and 35% cassava. On average, maize producers harvested 456 Kilos, with highest values in North (1,076 Kilos) and Adamawa (985). Groundnuts producers harvested around 337 Kg nationally, with peaks again in North region (615 Kilos).

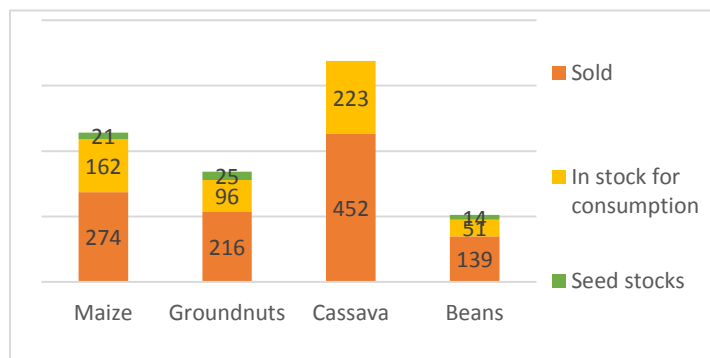
Figure 27: Most common crops cultivated (% of households)



Around 43% of maize producers sold part of their

productions, including in highly food insecure areas; while 76% have some stocks remaining from the harvest and over 70% kept part of it as seed stock for the next season. In Adamawa region, almost

Figure 28: Main destination of use for commodities produced by farmers (Kg)



60% of households sold part of their crops, against 57% in the East region and 49% in North-West.

On average, farmers in Cameroon produce 2.9 crops, mainly maize and cassava. In South and Centre regions, this average reaches 3.5 crops while the lowest number is observed in Far North and Adamawa regions (2.4). Only 1.5% of farmers cultivate all the four most common commodities (maize,

groundnuts, cassava and beans) which is symptomatic that the consumption patterns of main staples vary significantly across geographical lines.

Cassava is mainly produced in those regions where maize consumption is relatively less frequent (East, Centre, South). The climate conditions of Far North are suitable for the cultivation of millet and sorghum – the most common crops of the region. Maize production is low and cassava is almost non-existent, whereas they are not cultivated in the main urban and peri-urban centres of Yaoundé and Douala. Typical of urban areas, the latter have a more diversified spectrum of staples consumed with subsequently predominant production of Maize and Cassava. Table 6 below shows in detail the proportion of households who cultivated the various staple crops by division.

Table 6: Main staple crops cultivated

Crop	Stratum												
	Douala	Yaoundé	Adamawa	Centre	East	Far North	Littoral	North	North West	West	South	South West	Total
Maize	70%	71%	89%	50%	49%	39%	62%	81%	97%	98%	42%	71%	68%
Groundnut	47%	30%	47%	60%	63%	38%	23%	71%	20%	40%	65%	6%	41%
Cassava	27%	71%	45%	84%	85%	0%	76%	2%	17%	29%	87%	70%	35%
Beans	20%	13%	16%	1%	1%	33%	4%	18%	73%	74%	1%	4%	30%
Macabo	25%	34%	8%	59%	43%	0%	58%	0%	27%	20%	59%	54%	25%
Bananas	21%	44%	2%	57%	40%	0%	42%	0%	14%	12%	68%	47%	21%
Millet	0%	0%	7%	0%	0%	47%	0%	44%	0%	0%	0%	0%	16%
Yam	15%	10%	6%	20%	4%	0%	26%	0%	15%	8%	13%	27%	10%
Sorghum	0%	0%	0%	0%	0%	39%	0%	8%	0%	0%	0%	0%	10%

On average, during the 2016/2017 agricultural campaign, farmers produce around 1,083Kg of commodities, including 303 Kg of maize; 214 Kg of Cassava; 136 Kg of Banana and 115Kg of tubers; 114 Kg of Groundnuts; 81 Kg of millet; 54 Kg of sorghum; 52 Kg of beans; and 12 Kg of fresh vegetables¹⁶. The national average obviously hides extremely diverging production patters across regions.

- The highest production per farmer is observed in South region (2.8 MT/farmer), where 58% of households depend on farming and the average surface is relatively high (2.1 Ha/farmer).
- The second highest production per farmer is observed in East region (2.2 MT/farmer), where a slightly higher proportion of people comprises farmers (59%) but with a much lower average of cultivated surface (1.4).
- It is somehow surprising to notice that West region scores one of the lowest average production per farmer (897 Kg), which is mainly due to a very low surface cultivated (1.3 Ha/farmers) despite the high proportion of the population involved with farming (70%).
- Similar patterns are observed in the highly food insecure Far North region, where 76% of people are farmers but productions are low and poorly diversified (around 1,230 Kg of maize, millet and sorghum, mainly). The average surface cultivated is in line with the national average (1.7 Ha). The main limiting factors to agricultural production in Far North are extremely low yields. The variety of crops cultivated in Far North is the lowest in Cameroon (1.6 crops per farmer, mainly millet and to a lesser extent maize and groundnuts) as opposed to 2.1 crops nationally and 2.5 crops per farmer in Centre, South and West.
- Low yields are also observed in North West region, mainly as a result of below average rainfall during the January-March sowing seasons both in 2016 and in 2017¹⁷. In particular, on average each maize producer in the region reaches a 240 Kg production against 460 Kg nationally; furthermore, cassava producers from North West produce 340 Kg against 810 on average in

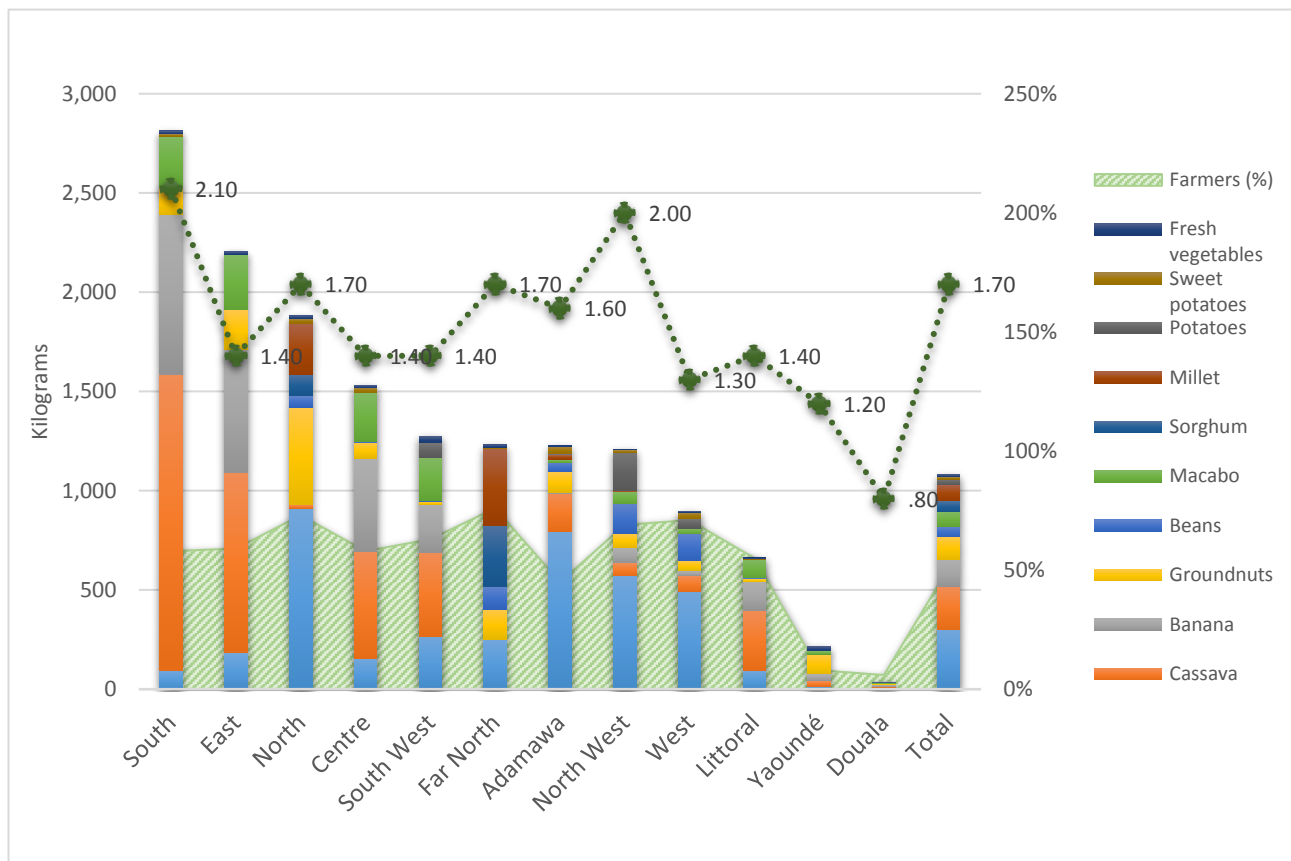
¹⁶ The calculation is based on a four response options which may slightly undermine estimations of crop productions.

¹⁷ http://dataviz.vam.wfp.org/seasonal_explorer/rainfall_vegetation/visualizations#

Cameroon; finally, groundnuts producers in the region harvest 180 Kg on average against 320 Kg as a national average.

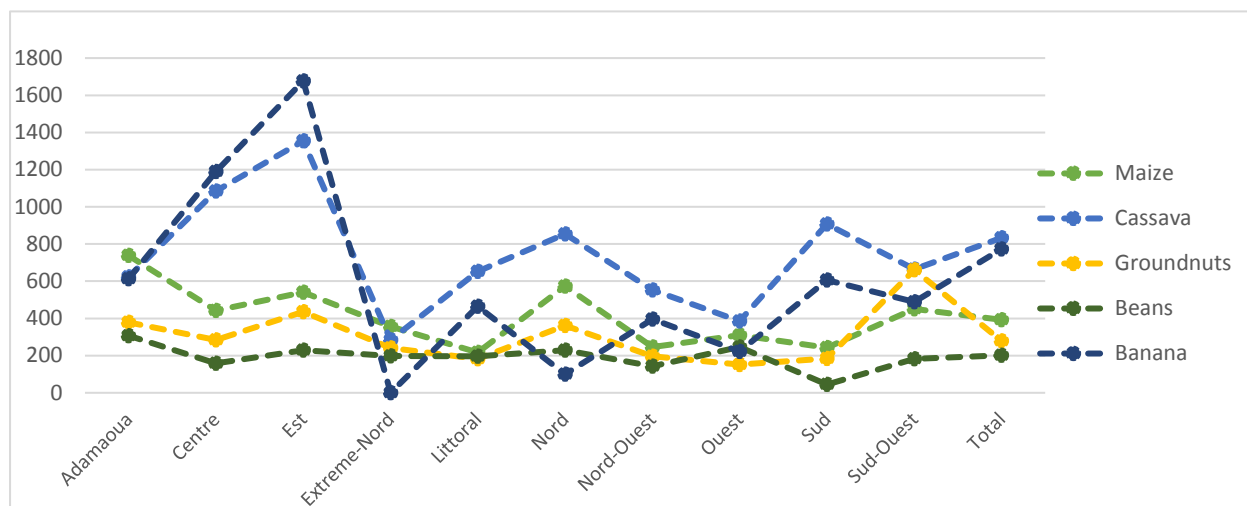
- Similar rainfall deficits during the delicate sowing season have affected West region in 2016 and 2017.

Figure 29: Proportion of farmers, average crops production and average surface cultivated by farmer



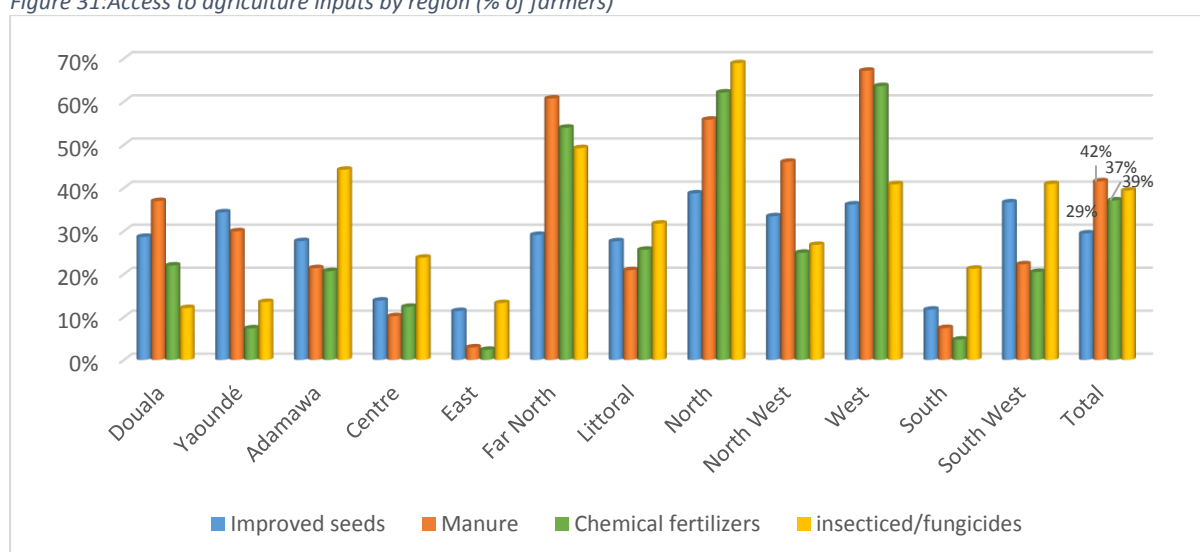
The lowest yields of the main commodities are observed in Far North, North-West and West regions. Access to agricultural inputs – including improved seeds, fertilizers, pesticides and fungicides - in both regions is not problematic. Instability in the Lake Chad region and limited access to fields in Far North and North-West could justify low yields in the two regions. In West and North-West, below average rainfall in the first quarter of 2017 also help explain the low yields. Finally, West reported a very high proportion of farmers suffering from crops’ diseases (24%) while around 10% of farmers in Far North and North-West had crops affected.

Figure 30: Average yields of main commodities by region (Kg/Ha)



Except in East, South and Centre regions, access to agricultural inputs is generally satisfactory. Around 55% of farmers utilized some sort of fertilizers, whether organic or chemical ones, and almost one third of them accessed improved or hybrid seeds. Limited access to key inputs such as fertilizers and high-quality seeds contributed to low yields observed for the main crops in South, East and Centre regions. Conversely, Far-North, North-West and West regions see among the highest rates of farmers utilizing the most common agricultural inputs. In particular, 80% of farmers in Far North and West had access to either organic or chemical fertilizers, and around 30% to high quality seeds. Despite the usage of such inputs, plant diseases, erratic rainfall and instability resulted into low productions and yields for main crops in these regions in 2016/17. In particular, farmers in these three regions have faced chronic limitations in terms of access to land since the past 25 years. High productivity and yields partially mitigated such constraint. However, increased yields resulting from the use of irrigation, high-quality seeds, chemicals were only observed on cash crops – the three regions are the main exporters of fresh foods to main urban centres in Cameroon - while food crop productions are far from meeting the internal demand.

Figure 31: Access to agriculture inputs by region (% of farmers)

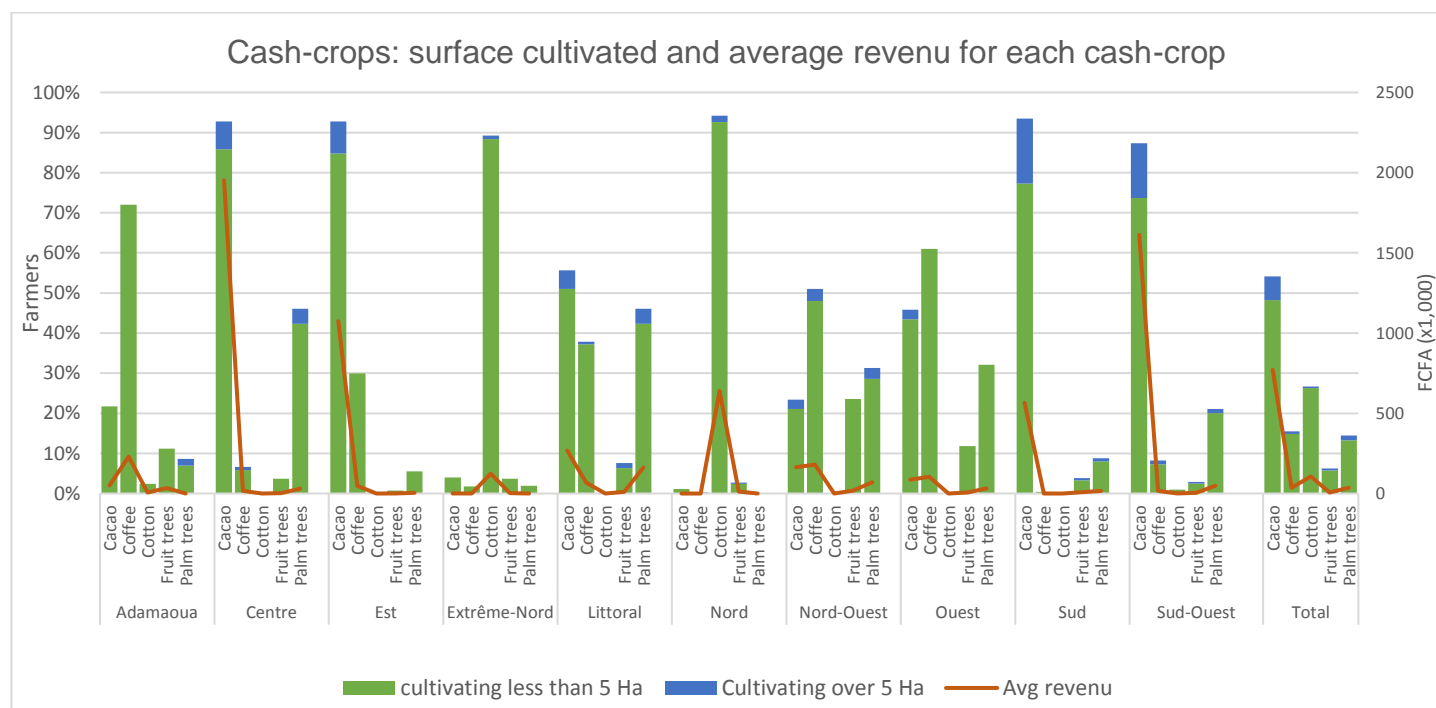


7.1.2 Cash crops

Around 16% of households interviewed practice cash-crop farming, including cocoa (54%), coffee (15%), palm trees (14%), cotton (27%), fruit trees (6%) and to a much lower extent rubber trees. Only Centre, Littoral, South and South-West regions have over 30% of households cultivating at least one cash crop.

It is interesting to notice that cash-cropping is not seen as a specialized productive activity for most of the population in Cameroon. Around nine in ten households cultivating cash-crops also practice subsistence farming or food-crops. This shows that farmers may use cash from sale of coffee, cocoa, and other cash crops as accessory income sources that may not grant enough income to meet their food demand. In other words, Cameroon is yet to reach an intensive production model of cash-cropping which grants sustainable revenues to specialized farmers.

Most cash crop producers across Cameroon cultivate small parcels for such productions, with only exception of cocoa. Over one in four cocoa producers cultivate an average surface of two Ha and above, against only 5% of coffee, 4% of palm trees, and 3% of cotton producers. Big producers of cocoa are mainly observed in South and South-west, where 16% and 14% of producers cultivate an average surface above 5 Ha, respectively. Coffee is mainly cultivated by small producers North-West (51%), and West (61%). Around 66% of cash crop producers in Adamawa cultivate less than two hectares, as well as 47% in West and 30% in North-West. Finally, cotton is cultivated by a high number of farmers in North and Far North due to the combination of agro-climatic factors (i.e. low rainfall in northern Cameroon) and financial ones, given that the proximity with Nigeria is conducive to cross-border trade. Cultivation of cash crops is seemingly associated with higher likelihood of food security situation among households. As a matter of fact, those regions with lowest rates of farmers cultivating cash crops have the highest rates of food insecurity.



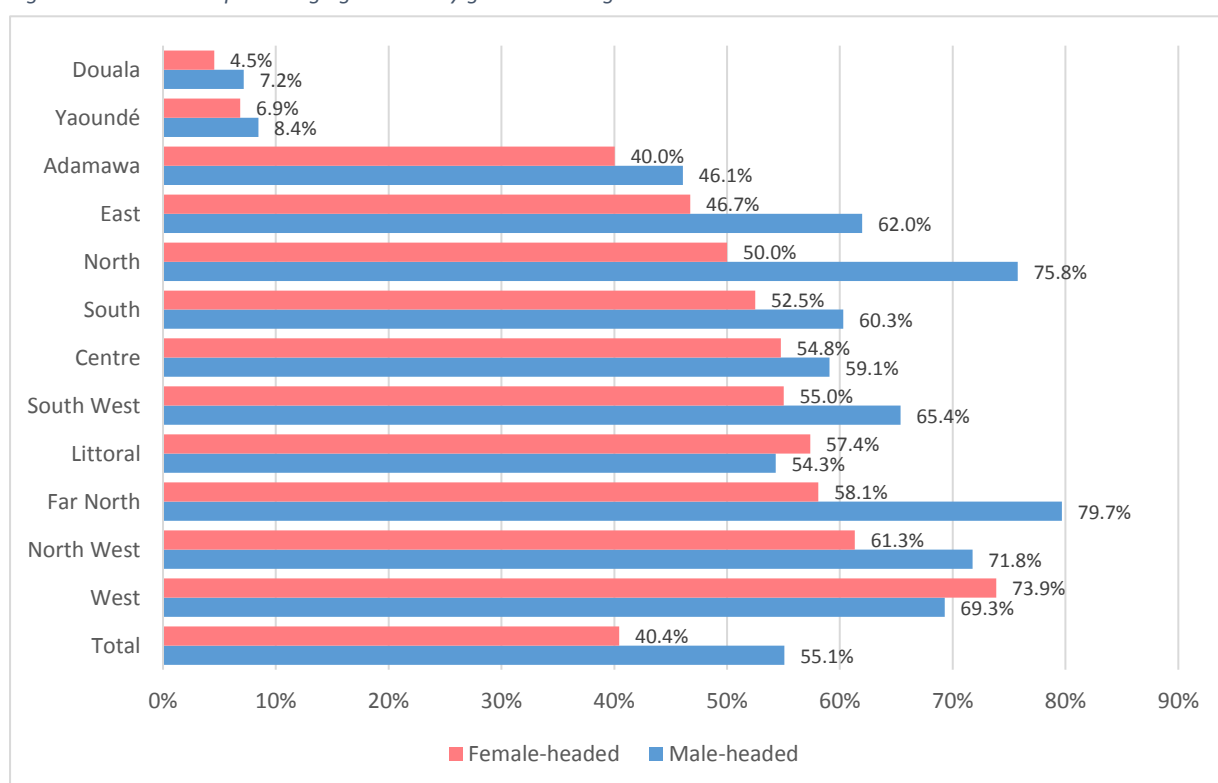
In the central and south-Western parts of the country, favourable climate and increasing prices trends of cocoa as compared to coffee encouraged small producers to plant and cultivate such cash-crop.

Sale of cocoa ensures the highest mean revenue for cash crop farmers in most regions, and notably in Centre (just below 2 million FCFA) and South-West (1.6 million FCFA). As mentioned, cotton is the main cash-crop revenue for farmers in North (640,000 FCFA/farmer) and Far North (125,000 FCFA), while coffee ensures the highest revenues in Adamawa (230,000 FCFA/farmers) and North-West (180,000 FCFA/farmer).

Engagement in agriculture and gender

Overall, a higher proportion of male-headed households has practiced agriculture over the last season (55.1% vs. 40.4% of female-headed households). At the regional level, the gap is more pronounced in the regions of Far North (79.7% of male-headed households vs. 58.1% of female-headed households) and North (75.8% vs. 50.0%); West is the only regions with a higher percentage of female-headed households practicing agriculture (73.9% vs. 69.3% of male-headed households).

Figure 32: Households practicing agriculture by gender and region



7.2 Livestock

Almost one in two household in rural areas of Cameroon rely on livestock production, particularly in the regions of Far-North (57.3%), North (47.9%) and North West (41.5%). More male-headed than female-headed animals raise animals (31.8% vs. 18.4% of households). In terms of wealth, a wider proportion of households falling in the poorest wealth quartile raise animals compared with the better-off quartile (52.7% vs. 15.9% of households). There is also a wide disparity between rural and urban areas: only 2.8% of households in Douala and Yaoundé raise animals; such proportion increases to 23.2% of households in other urban areas and reaches 46.3% in rural areas. Lack of means (61.3% of households), lack of grazing (12.5%), health issues (5%) and insecurity (4.8%) are the main reason why households do not raise animals.

Ownership of each type of livestock varies across regions; however, households mainly raise poultry, sheep or goats and pigs (respectively, 69.3%, 51.7% and 24.1% of households reported to raise these type of animals). Cattle farming is more common in the region of Adamawa – where 23.3% of households rely on livestock production. This explains why Adamawa registers the highest level of Tropical livestock units (TLUs).

As table 7 shows, the average number of animals owned it is small across all surveyed areas. This, together with the fact that most households who raise animals are in rural areas of the poorest regions Cameroon might suggest that livestock raising is mainly done at small-scale level as additional activity to support to households' subsistence and food security status.

Table 7: Livestock ownership and TLU

		Households raising animals	% of households owning different livestock types						Tropical livestock unit (TLU)
			Cattle	Sheep/ goats	Donkey/ horses	Pigs	Poultry	Camels	
Strata	Adamawa	23.3%	42.7%	39.6%	2.1%	4.0%	53.4%	0.6%	9.4
	Centre	33.8%	1.1%	29.1%	5.9%	23.4%	76.5%	0.0%	0.7
	East	17.8%	12.2%	29.9%	0.0%	34.5%	58.9%	1.4%	2.2
	Far North	57.3%	36.2%	79.7%	25.7%	14.5%	64.1%	1.1%	4.6
	Littoral	29.3%	0.8%	21.3%	8.9%	32.5%	75.4%	0.0%	0.6
	North	47.9%	42.8%	81.0%	11.7%	6.6%	54.0%	1.1%	4.6
	North West	41.5%	11.3%	42.5%	2.8%	37.5%	68.4%	0.0%	3.4
	West	25.7%	0.7%	22.9%	1.5%	53.0%	57.2%	0.0%	0.9
	South	32.6%	0.0%	12.4%	1.4%	25.2%	83.8%	2.8%	0.5
	South West	22.6%	0.2%	25.3%	0.0%	39.0%	62.2%	0.0%	0.5
	Douala	3.1%	11.4%	7.7%	0.0%	25.0%	49.8%	11.6%	3.0
Yaoundé	2.4%	25.9%	14.7%	0.0%	51.2%	35.9%	0.0%	2.4	
Divisions with refugees	Djérem	25.5%	53.7%	29.5%	2.2%	1.9%	45.5%	0.0%	8.9
	Faro-et-Déou	25.7%	41.8%	59.0%	4.1%	0.0%	41.6%	0.0%	10.7
	Mayo-Banyo	31.8%	29.0%	17.8%	1.8%	8.5%	59.7%	0.0%	6.7
	Mbéré	15.2%	41.4%	46.9%	5.3%	5.3%	40.0%	0.0%	10.1
	Vina	21.7%	48.4%	50.7%	0.7%	2.3%	59.3%	1.5%	10.8
	Boumba-et-Ngoko	16.8%	0.0%	42.2%	0.0%	53.9%	71.5%	0.0%	0.7
	Haut-Nyong	20.3%	0.0%	30.7%	0.0%	39.2%	70.5%	0.0%	0.8
	Kadey	21.3%	18.1%	39.9%	0.0%	23.7%	48.4%	2.4%	2.3
	Lom-et-Djérem	14.6%	21.5%	16.0%	0.0%	32.5%	53.7%	2.1%	3.8
	Diamaré	40.1%	36.5%	74.4%	19.9%	3.8%	56.0%	0.5%	4.9
	Logone-et-Chari	37.3%	19.3%	85.2%	42.7%	1.7%	50.2%	2.0%	3.8
	Mayo-Danay	64.6%	35.7%	88.2%	11.7%	24.4%	74.2%	1.3%	4.5
	Mayo-Kani	75.8%	57.8%	86.8%	26.5%	21.4%	66.3%	2.1%	8.2
	Mayo-Sava	56.4%	34.5%	76.8%	12.3%	8.5%	58.4%	0.0%	4.0
	Mayo-Tsanaga	75.5%	29.8%	71.3%	36.5%	16.4%	67.7%	0.8%	2.8
	Bénoué	39.1%	44.2%	81.9%	5.1%	2.7%	46.7%	1.4%	4.3
	Faro	69.0%	40.2%	72.2%	3.3%	4.6%	63.0%	0.0%	4.5
Mayo-Louti	64.0%	40.7%	88.1%	24.4%	8.5%	56.4%	0.6%	4.3	
Mayo-Rey	46.4%	43.9%	69.6%	8.3%	13.1%	63.4%	1.5%	5.8	
Total		28.3%	21.2%	51.7%	11.0%	24.1%	63.9%	0.8%	3.2

Given the opportunity to access a more diversified and protein-rich dietary regime, households involved in livestock production are slightly less vulnerable to food insecurity. The only exception is observed in the Far-North region where livestock ownership does not translate in a proportionately easier access to milk, dairy products and meat reflecting a situation of extremely low milk production

per animal head (mainly cattle) and low tendency to kill animals probably due to cultural legacy and status symbol of wealth inherently related to livestock ownership.

7.3 Fisheries

Only 2.9% of households practice fishing, with slightly higher shares of households in South (12.8%) and East (8.5%) that are regions richer in lakes, small ponds and rivers. Fishing is more common in rural areas (5.3% of households), among households falling in the lowest wealth quartiles (5.7% of very-poor households and 4.2% of poor households) and among male-headed households (3.6).

Most households catch fish in rivers, with the exception of households located in North West, South West and Adamawa, where sea fishing and fish breeding are more common. Fish breeding and sea fishing are more practiced in urban than in rural areas; moreover, the proportion of households breeding fish increase with household's wealth, passing from 3.3% of very poor households to 33.2% of better-off ones.

Most fishermen are also the owners of their activity, with 34% of them also owning at least one boat; however, the in the regions of Centre, North West and South the proportion of households who have at least one boat is significantly lower than the national average.

Almost 7 out of 10 households buy the fishing material they need using cash, 8.7% of households inherited the materials and 8.4% of households reported to use materials belonging to a third person.

Table 8: Type of fishing and sources of fishing materials

		Households practicing fishing	Type of fishing			At least one canoe	Sources of fishing materials					
			Fishing	River fishing	Catching fish		Cash	Credit	Donation from NGO/ Government grant/ Cooperative	Inherited	Leasing	Belongs to a third person
Region	Adamawa	4.2%	19.4%	75.2%	5.4%	32.2%	84.1%	5.3%	0.0%	0.0%	6.2%	5.9%
	Centre	4.9%	3.1%	93.1%	6.9%	11.6%	70.2%	0.0%	0.0%	10.5%	0.0%	2.7%
	East	8.5%	1.3%	94.9%	3.8%	32.4%	72.0%	2.5%	1.1%	1.2%	1.8%	3.8%
	Far North	3.3%	0.0%	95.1%	4.9%	56.5%	53.7%	11.5%	0.0%	2.4%	22.1%	9.0%
	Littoral	3.1%	0.0%	84.6%	15.4%	28.2%	80.7%	0.0%	4.0%	7.9%	0.0%	15.3%
	North	3.5%	8.0%	92.0%	0.6%	62.2%	69.2%	17.0%	0.0%	8.0%	5.6%	8.4%
	North West	1.4%	38.9%	32.8%	67.2%	9.2%	30.7%	14.1%	0.0%	0.0%	0.0%	10.4%
	West	1.4%	0.0%	63.6%	36.4%	29.7%	58.9%	0.0%	0.0%	13.6%	0.0%	13.6%
	South	12.8%	8.1%	82.4%	15.2%	18.1%	80.9%	1.3%	1.5%	23.1%	1.7%	14.0%
	South West	2.7%	38.6%	67.5%	38.3%	63.0%	69.0%	10.0%	2.4%	11.4%	12.4%	7.2%
Residence	Yaoundé/Douala	0.1%	0.0%	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	Other urban areas	1.6%	13.2%	65.5%	25.2%	28.1%	66.0%	2.7%	3.2%	9.0%	9.0%	12.0%
	Rural	5.3%	8.1%	87.7%	11.5%	35.4%	68.8%	6.8%	0.3%	8.7%	5.8%	7.8%
Wealth quartiles	Very Poor	5.7%	7.0%	92.6%	3.3%	35.6%	61.7%	6.8%	0.0%	5.3%	11.6%	7.0%
	Poor	4.2%	7.6%	84.5%	15.3%	38.4%	71.8%	6.0%	0.7%	9.6%	4.0%	10.5%
	Middle income	1.8%	8.4%	72.7%	22.8%	26.3%	73.0%	6.0%	0.8%	9.2%	2.3%	9.7%
	Better-off	0.9%	23.6%	69.4%	33.2%	25.4%	76.1%	2.8%	4.4%	19.2%	0.5%	3.2%
Sex of the HHH	Male	3.6%	8.8%	83.5%	13.7%	33.7%	68.7%	6.4%	0.7%	8.0%	6.8%	8.1%
	Female	0.9%	9.2%	90.5%	12.9%	36.8%	66.4%	2.2%	1.0%	17.1%	0.4%	11.8%
Total		2.9%	8.8%	84.1%	13.7%	34.0%	68.6%	6.1%	0.8%	8.7%	6.3%	8.4%

Despite being a small number, the study shows that households relying on fishing are more food secure than households who do not do this activity. This might be explained by the fact that households involved in fishing consume higher quantities of proteins and micronutrients. Indeed, for more than half of households, household members consume all catches, with a higher prevalence among female-headed households (64.3% vs. 49.4% of male-headed households). In North West however, more households use the fish they catch for purposes other than household consumption: no household keeps all the catches for the household members, 58.9% of them reported to keep only up to one quarter of their catches, 16.6% keeps between one quarter and half of catches and 24.5% keeps more than $\frac{3}{4}$ of their catches.

Small fishes are the most frequent type of fish caught by Cameroonian fishermen, followed by medium fish and crustaceans. The proportion of households who mainly catch crustaceans is higher in the regions of South (56.3%), Centre and (44.6%), Littoral (41.9%); a higher prevalence of households catching big fish can be found in the region of South West (30.6%). On average, the most important catches are done in 4.8 months in a year, ranging from February to June.

Rest periods are an important method of conserving fish stocks, allowing for stocks to grow at a rate compatible with maintaining fishing activity outside the rest periods.

8 SECTORIAL ISSUES AFFECTING FOOD SECURITY

8.1 House ownership and conditions

8.1.1 Housing ownership

Overall, 69% of households own the house where they live, 25.4% pays a rent and 5.6% occupy the dwelling where they live for free. This pattern can be observed across all regions and divisions. Living in a rented dwelling is more common in urban than in rural areas (7.4% in rural areas vs. 48.4% in Yaoundé and Douala and 32.8% in other urban centers). In rural areas 87.2% of households own the house where they live compared to 46.6% in Yaoundé or Douala and 60.9% in other urban centers. More male-headed households own the dwelling where they live compared to female-headed households, 70.5% and 64.7% respectively. House ownership declines with wealth status. Table 9 summarizes the ownership status and housing materials by region, division, residence, sex of the head of household and wealth quartile.

Table 9: Ownership status of dwellings and durability of construction materials

		Ownership			Roof type	Wall type	Floor type
		Own	For free	Tenant	Non-durable materials	Non-durable materials	Non-durable materials
Region	Adamawa	80.0%	4.5%	15.5%	20.8%	35.2%	41.6%
	Centre	76.5%	7.8%	15.7%	5.2%	40.4%	46.9%
	East	74.8%	5.4%	19.7%	31.7%	45.6%	54.3%
	Far North	90.1%	4%	6%	59.7%	69.8%	84.0%
	Littoral	68.7%	10.6%	20.8%	0.5%	44.9%	21.5%
	North	91.0%	3.3%	5.8%	43.5%	55.1%	66.5%
	North West	72.6%	3%	24.4%	6.3%	33.3%	39.3%
	West	73.9%	6.4%	19.7%	0.7%	30.6%	36.3%
	South	64.0%	10.3%	25.7%	0.7%	36.6%	32.5%
	South West	51.8%	9.2%	39.0%	1.2%	38.6%	13.2%
Divisions with refugees	Djérem	83.1%	2.9%	14%	24.6%	45.9%	46.0%
	Faro-et-Déou	89.8%	5.1%	5.1%	25.9%	40.4%	42.4%
	Mayo-Banyo	86.9%	4.8%	8.3%	22.6%	48.5%	59.7%
	Mbéré	85.6%	4.1%	10.3%	25.4%	18.5%	52.8%
	Vina	71.2%	5%	23.8%	15.6%	31.6%	26.9%
	Boumba-et-Ngoko	75.5%	11.8%	12.8%	37.3%	72.2%	70.7%
	Haut-Nyong	85.2%	5%	9.8%	29.1%	65.9%	70.5%
	Kadey	77.9%	7.2%	14.9%	48.5%	45.9%	61.7%
	Lom-et-Djérem	67.1%	2.5%	30.5%	21.5%	25.0%	35.4%
	Diamaré	80.3%	8.3%	11.4%	41.5%	39.2%	59.4%
	Logone-et-Chari	84.2%	5.9%	9.9%	49.1%	72.2%	86.3%
	Mayo-Danay	95.2%	1.4%	3.3%	81.0%	81.0%	90.8%
	Mayo-Kani	96.6%	0.5%	2.9%	75.0%	79.1%	89.2%
	Mayo-Sava	92.1%	3.6%	4.3%	60.4%	71.1%	88.5%
	Mayo-Tsanaga	96.7%	1.9%	1.4%	61.6%	87.4%	99.4%
	Bénoué	88.7%	3.8%	7.5%	35.3%	46.8%	56.6%
	Faro	92.6%	2.5%	4.9%	59.0%	67.7%	74.8%
Mayo-Louti	94.3%	2.1%	3.6%	48.2%	63.9%	79.6%	
Mayo-Rey	92.7%	3.2%	4.1%	56.6%	63.9%	75.1%	
Residence	Yaoundé/Douala	46.6%	5.1%	48.4%	0.0%	21.6%	5.8%
	Other urban areas	60.9%	6.4%	32.8%	4.7%	26.2%	21.8%
	Rural	87.2%	5.4%	7.4%	33.2%	58.9%	67.2%
Sex of the household head	Male	70.5%	5.3%	24.2%	19.2%	41.6%	40.8%
	Female	64.7%	6.5%	28.9%	7.7%	34.0%	29.7%
Wealth quartiles	Very Poor	96.7%	2%	1.3%	81.0%	82.9%	99.0%
	Poor	77.9%	7.4%	14.7%	2.0%	49.3%	56.6%
	Middle income	56.2%	6.1%	37.7%	0.3%	28.4%	16.6%
	Better-off	55.6%	6.1%	38.4%	0.1%	12.0%	1.1%
Total		69%	5.6%	25.4%	16.2%	39.6%	37.9%

8.1.2 Durability of houses

Based on the type of building materials used to build dwellings' walls, roof and floor, the durability of structures was assessed. The building materials of each dwelling component were divided in two categories: non-durable and durable. Walls built with straw, wood and earth were classified as non-durable; conversely, walls made of semi-permanent materials, stones and bricks were classified as durable. Roofs classified as non-durable were made of mud, straw, wood or tents; whereas tiles, corrugated iron sheets and other types of permanent sheets were considered as durable materials. Similarly, floors made of clay/sand and woods planks were classified as non-durable; conversely, floors made of cement or ceramic tiles were classified as durable.

Overall, a majority of households lives in a dwelling built with durable materials: 83.8% of households lives in a house with a durable roof, 60.4% in a house made of durable walls and 62.1% in a dwelling with durable floors. There are regional and divisional variations, with a higher proportion of households living in dwellings with straw roofs – that is Adamawa (19.2%), East (31.2%), North (42.2%) and Far-North (58.4%). Far-North is also the region with the highest proportion of households living in dwellings made with non-durable walls (69.8% of households), followed by North (55.1%) and East (45.6%). These regions also had the highest proportions of households living in dwellings with non-durable floors: materials such as clay or sand were common among 83.4% of households located in the region of Far-North, 65.7% in the region of North and 53% in the region of East.

As shown on table 9, compared to rural households, most urban households live in dwellings built with durable materials. A slightly higher proportion of female-headed households live in durable houses compared their male-headed counterparts. In terms of wealth, households in the middle income and better off quartiles are more likely to live in durable houses than the lower wealth groups. Indeed, 77.5% of very poor households live in dwellings whose roof is made of straw and 96.6% of them live in houses whose floor is made of clay and sand. Conversely, 98.2% of urban households live in a dwelling whose roof is made of corrugated iron sheets, 77.4% of them live in a dwelling whose floor is made of cement and 21.4% live in a dwelling with floors made of ceramic tiles.

8.2 Sources of lighting and cooking energy

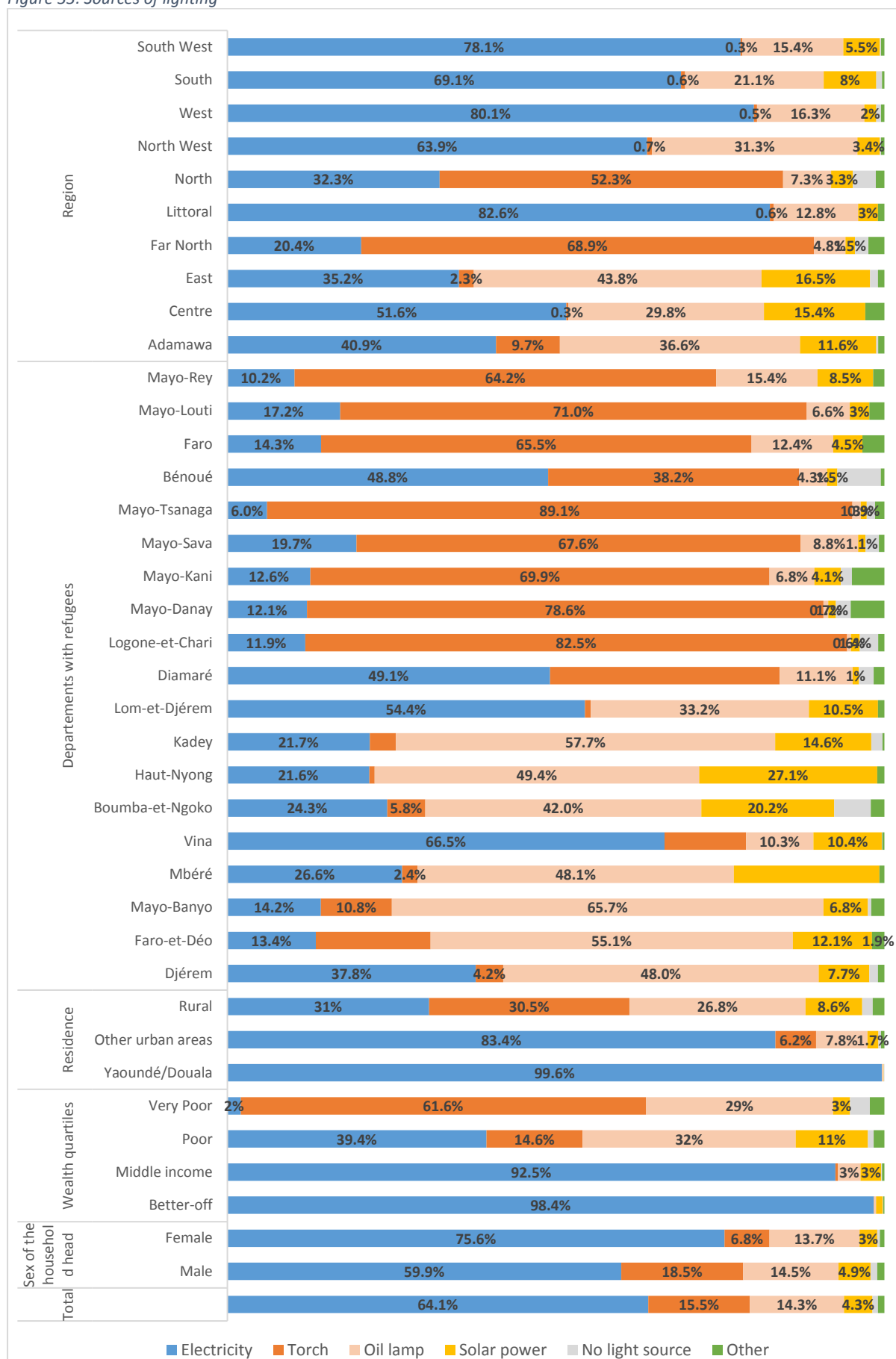
Overall, electricity is the most common source of lighting in Cameroon (64.1% of households), followed by torches, oil lamps and solar power (respectively, 15.5%, 14.3% and 4.3% of households). Only a small proportion of households (0.2%) do not have access to any source of lighting.

However, the use of these sources varies geographically, with high proportions of rural households who rely on torches and oil lamps (30.5% and 26.8% of households, respectively) compared to their urban counterparts, 80% of whom have access to electricity. Regional differences can also be observed: torches represent the main source of lighting for households located in Far-North and North (68.9% and 52.3%, respectively); in the region of East, the use of oil lamps is also common (43.8% of households).

The proportion of households using electricity increases with the wealth of the household: only 2% of very poor households use this source of lighting compared to 98.4% of households falling in the better-off quartile. Indeed, among very poor households the use of torches and oil lamps is more common (61.6% and 29% of households, respectively).

In terms of gender differences, the proportion of female-headed households who have access to electricity is 4.2 percentage points higher than that of male-headed households, who rely more on the use of torches (11.7 percentage points more than female-headed households).

Figure 33: Sources of lighting



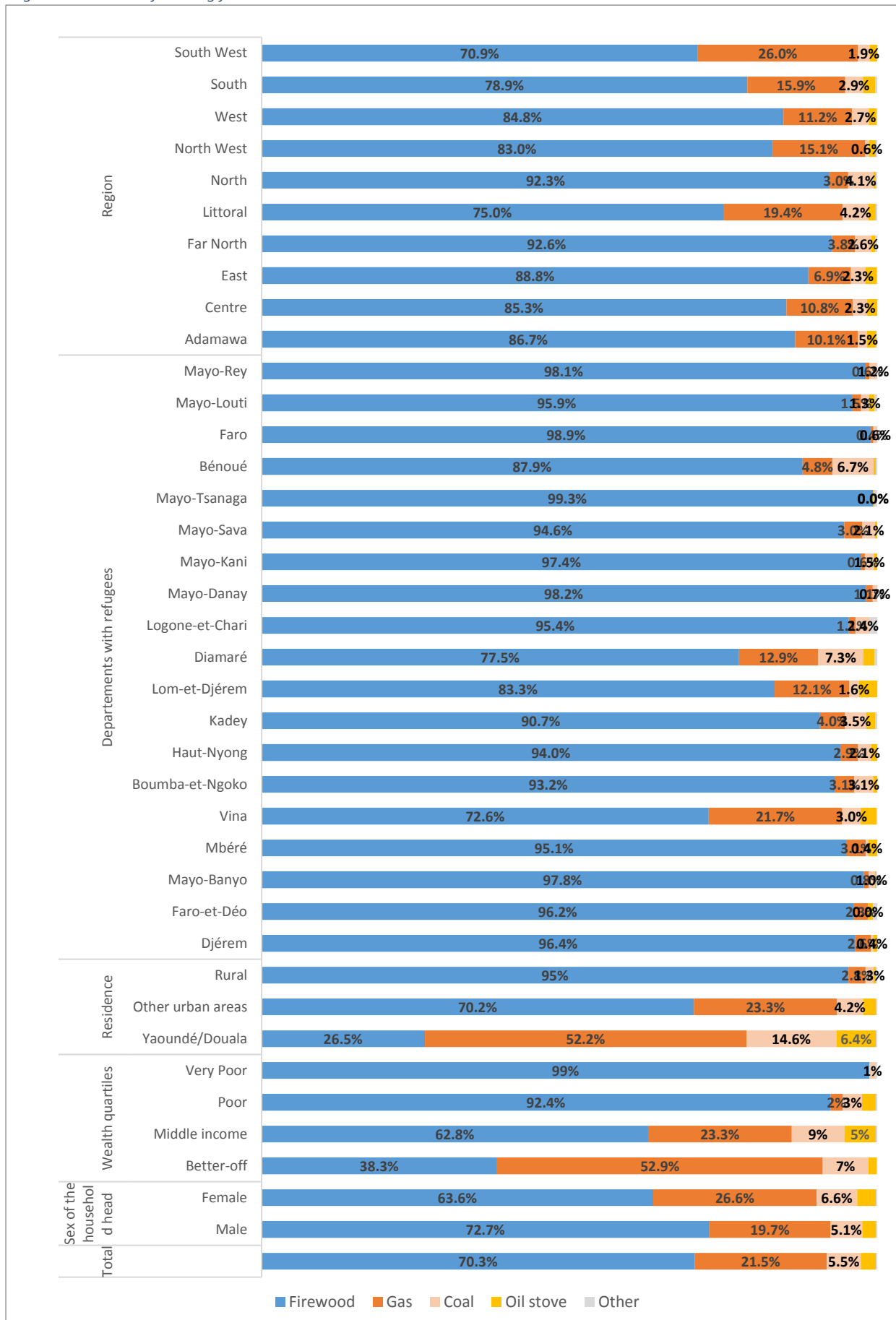
8.3 Source of cooking fuel

Overall, firewood represents the main source of energy for cooking for 70.3% of Cameroonian households, followed by gas, coal and oil stoves (with 21.5%, 5.5% and 2.5% of households, respectively). A similar distribution can be observed across all regions; however, regions belonging to the Great North have the lowest prevalence of households using improved sources of cooking fuel such as gas (only 3% in North, 3.8% in Far-North and 10% in Adamawa). The proportion of households who have access to gas is higher in urban than in rural areas, where only 10.1% of households reported to use this type of cooking fuel.

Access to better sources of cooking fuel increases with the wealth of the household: the vast majority of households in poor and very poor quartiles use firewood; conversely, a higher proportion of households in the middle income and better-off quartiles use gas instead of wood (23.3% and 52.9%, respectively).

The prevalence of female-headed households relying on wood is lower than that of male-headed households (63.6% vs. 72.2%, respectively); and female-headed households rely more on gas than their male-headed counterparts (26.6% vs. 19.7%, respectively).

Figure 34: Sources of cooking fuel



8.4 Assets Ownership and Wealth Groups

8.4.1 Wealth index

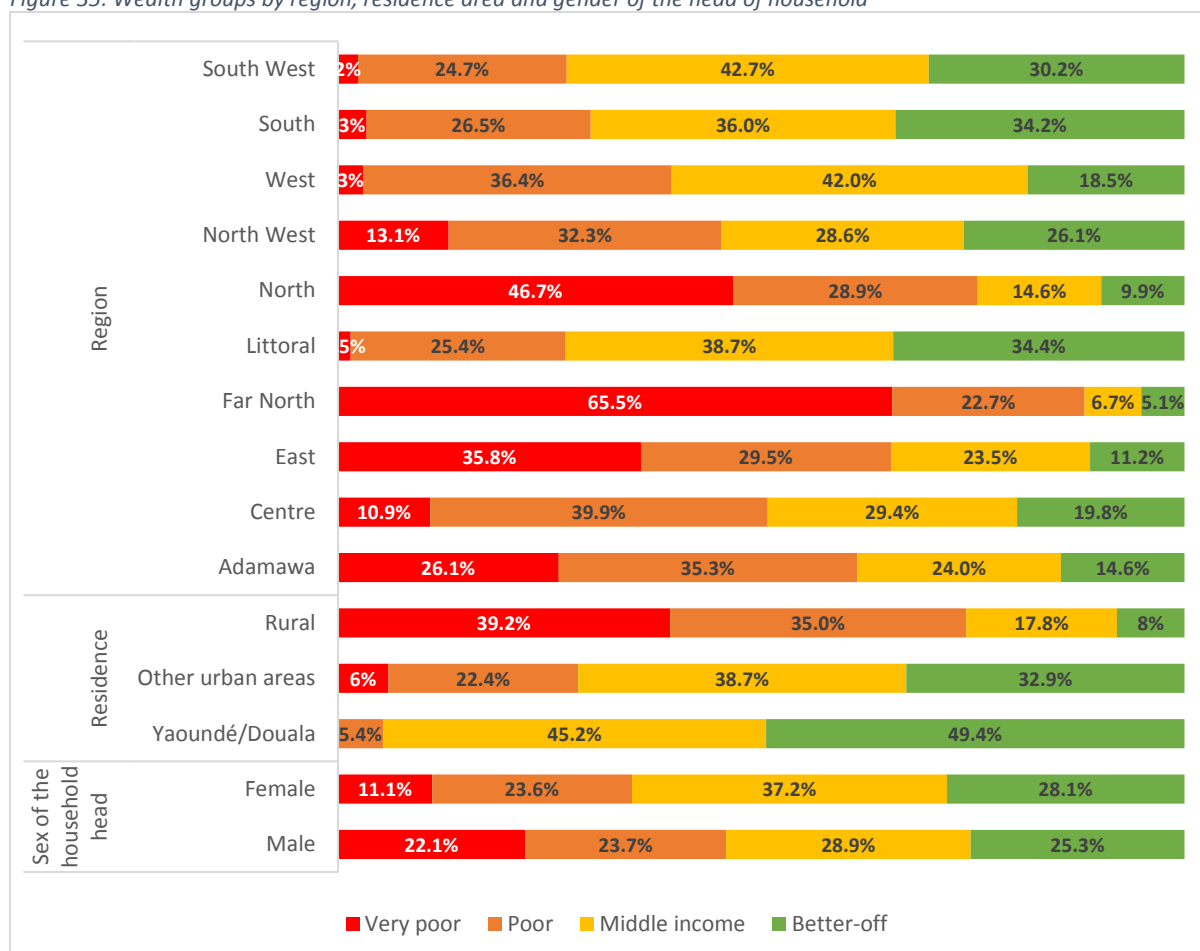
The Wealth Index (WI) is a relative measure of household wealth. Based on asset ownership and access to essential services and facilities (such as electricity, type of toilet used, sources of drinking water and cooking fuel), households were classified into four equal size groups – or quartiles – from the very poor to the better off. Table 10 summarizes the characteristics of households in each of the wealth index quartiles.

Table 10: Characteristics of households according to their wealth

Quartile	Description/characteristics
Very poor	<ul style="list-style-type: none"> No latrines/toilets inside the home Poor access to basic services (water and electricity) Houses built with non-durable materials (straw, plastic sheets, wood, etc.)
Poor	<ul style="list-style-type: none"> Limited access to basic services Better quality construction materials used to build the houses Some households own assets such as a mobile phone, iron or radio
Middle Income	<ul style="list-style-type: none"> Better access to basic services Households own more appliances such as a fridge or TV
Better-off	<ul style="list-style-type: none"> Running water and toilets inside the home and access to basic services Most households own all the above-mentioned assets/appliances Houses built with durable materials (cement, tiles, etc.)

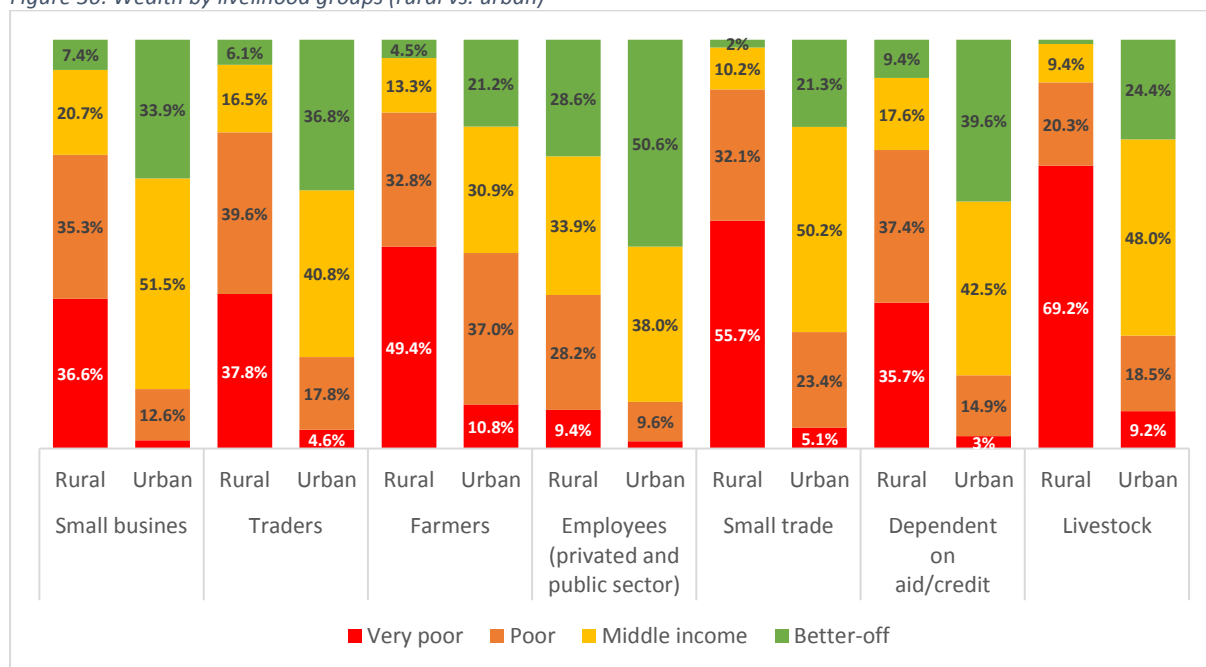
Far-North is the region with the highest prevalence of households in the poorest quartile (65.5%), followed by East (35.8%) and Adamawa (26.1%). A higher proportion of female-headed households are in the middle income and better off quartiles than female-headed households.

Figure 35: Wealth groups by region, residence area and gender of the head of household



Urban households are wealthier than their rural counterparts. Indeed, the proportion of households in the highest wealth quartiles is by far higher in urban than in rural areas; moreover, no household located in Yaoundé and Douala and only 6% of households located in other urban centers is in the very poor quartile. The same trend holds for livelihood groups: urban households depending on the same income generating activities are better off than their rural counterparts.

Figure 36: Wealth by livelihood groups (rural vs. urban)



8.4.2 Assets ownership

The majority of households own at least one productive asset, with no major differences across regions or household characteristics. However, most households own productive assets linked to the agricultural sector, such as a hoe (69.6% of households) and machete (74.9%). In terms of means of transport, only 6.9% of the all sampled households reported owning a car. Being a high-value asset, the proportion of households who own a car increases with the level of wealth, from 0.7% of households falling in the very poor quartile to 19.3% of households in the better-off quartile.

Urban household are also more likely to own a car than their rural counterparts (9.5% vs. 3.7%, respectively). The proportion of male-headed and female-headed households who own a car is similar (7.4% and 5.7%, respectively). Ownership of a motorbike is more common, especially among male-headed households (24.5% compared to 10.5% of female-headed households) and households in the better-off quartile (25% compared to 12.3% in very poor quartile).

In terms of appliances, most households (82.1%) own a mobile phone. The prevalence of mobile phone ownership was lowest among households in the very poor quartile (36.7%) and rural households (68.6%). The same holds for ownership of a TV, with only 1.5% of households in the very poor quartile and 25.7% of rural households who own this appliance. At the regional level, Far-North had the lowest prevalence of households who own a mobile phone or TV (53.2% and 12.1%, respectively).

Overall, 45.3% of households own a radio, 45.8% own an iron and 24% own a fridge. In regions hosting refugees, ownership of these assets is lower compared to the other regions. The urban/rural divide is also reflected in the ownership of appliances: a lower proportion of rural households own these assets

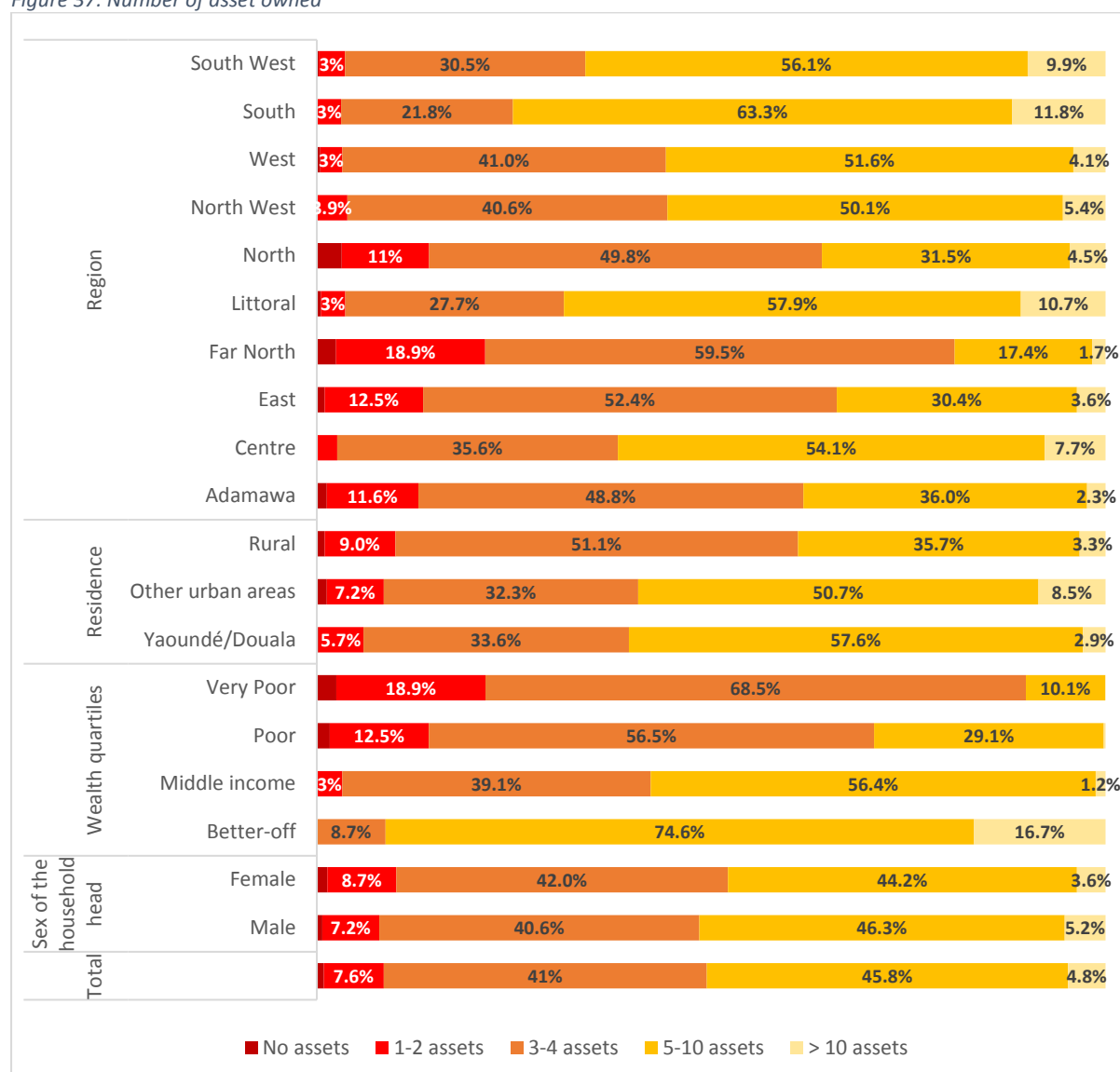
compared to their urban counterparts. Moreover, the ownership of a radio, iron or fridge increases with the wealth of the household.

Table 11: Proportion of households by assets owned (%)

		Sewing machine	Hoe	Sickle	Machete	Car	Motorbike	Radio	Iron	Fridge	Satellite dish	Fan	Mobile phone	TV
Sex of the household head	Male	9.5	71.6	23.6	76.6	7.4	24.5	47.9	43.9	22.9	16.9	25.4	81.3	52.5
	Female	10.9	64.2	10.8	70.2	5.7	10.5	38.1	51.2	27.1	14.3	27.6	84.3	60.7
Wealth quartiles	Very Poor	3.3	90.7	48.8	81.1	0.7	12.3	16.1	3.6	0.5	0.3	0.3	36.7	1.5
	Poor	6.4	80.5	24.2	81.9	1.1	22.4	35.7	12.1	1.1	1.1	4.3	81.9	4.7
	Middle income	10.9	60.1	11.0	70.7	4.9	21.4	51.2	59.2	5.3	11.6	28.9	96.0	88.0
	Better-off	16.5	55.5	6.5	69.1	19.3	25.0	68.7	91.7	84.4	47.2	61.1	99.0	99.7
Residence	Yaoundé/Douala	13.3	36.8	1.2	52.6	9.2	11.4	48.2	76.6	51.3	11.5	57.9	97.8	89.4
	Other urban areas	11.0	66.9	14.2	74.3	9.8	24.9	54.9	53.5	26.8	28.0	27.4	88.6	68.3
	Rural	7.1	90.1	35.2	88.1	3.7	23.4	37.1	23.1	6.5	10.8	6.9	68.6	25.7
Region	Adamawa	11.9	67.4	19.2	73.9	4.5	28.5	37.6	27.3	10.1	19.2	6.8	75.8	36.9
	Centre	8.9	88.1	17.6	91.6	6.1	22.7	48.9	43.3	18.5	19.3	11.6	80.8	45.3
	East	6.7	75.6	2.2	81.7	2.9	17.6	34.1	24.7	9.3	11.9	10.6	69.2	35.4
	Far-North	5.1	81.4	53.2	68.4	2.4	21.7	22.5	11.2	5.2	5.3	10.7	53.2	12.1
	Littoral	10.6	76.7	4.8	92.1	6.0	30.5	58.8	56.0	33.6	22.4	36.8	91.3	69.7
	North	9.5	77.3	53.6	74.6	4.8	32.2	34.8	21.1	8.7	10.6	18.0	72.7	25.7
	North West	10.0	80.9	13.1	88.9	9.4	20.5	60.0	46.0	15.6	27.9	9.7	82.7	53.1
	West	8.7	86.8	25.2	89.7	8.4	21.7	49.6	39.7	11.8	25.2	4.4	89.6	58.6
	South	8.2	83.2	12.6	91.2	8.9	22.2	62.8	61.8	31.0	33.5	23.6	90.3	68.6
	South West	11.5	78.8	9.8	88.2	9.8	26.6	60.3	59.2	26.9	18.9	37.2	89.4	68.6
Total		9.9	69.6	20.3	74.9	6.9	20.8	45.3	45.8	24	16.2	26	82.1	54.7

In terms of number of assets owned, 45.8% of households own 5 to 10 assets, 41% own 3 to 5 assets, 7.6% own 1 to 2 assets and 0.9% own no assets. The highest proportions of households who own no assets or 1 to 2 assets is higher in the regions of Far-North and North (21.3% and 14.2%, respectively), in rural areas (9.9%) and across the poorest wealth quartiles (21.4% of households falling in the very poor quartile and 14.2% of households falling in the poor quartile). The majority of households falling in the better off wealth quartile or living in urban areas own at least 5 different assets.

Figure 37: Number of asset owned



8.5 Water and sanitation

8.5.1 Access to safe drinking water

According to the UNICEF conceptual framework on malnutrition, an unhealthy environment, which includes use of unimproved drinking water and sanitation facilities, aggravates the likelihood of malnutrition. Use of improved water and sanitation facilities not only minimizes the incidences of diseases, but is also essential to achieve adequate food utilization¹⁸.

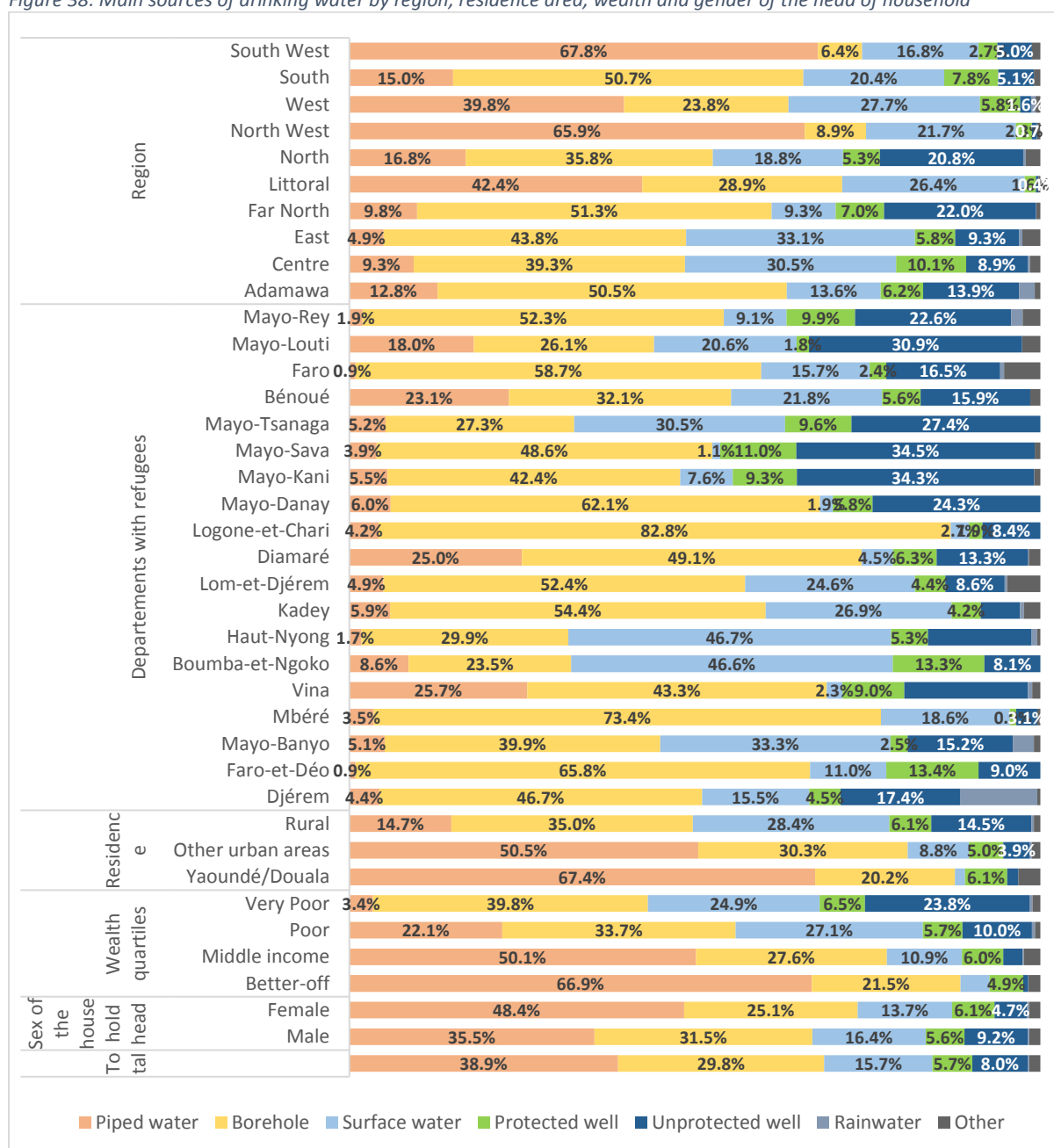
Households were asked about the main sources of drinking water they use, which were then re-categorized into improved sources (piped water, boreholes and protected dug well) and unimproved sources (surface water, unprotected dug well, rainwater). Overall, 74.5% of households reported using improved water sources, such as piped water (38.9%), borehole (29.8%) and protected well (5.7%). This represents a slight increase in the proportion of households who use safe water sources, which

¹⁸ https://www.unicef.org/wash/3942_statistics.html

was 72.9% in 2014¹⁹. The regions with the lowest prevalence of households using improved water sources are East (54.5% of households), Centre (58.7%) and North (57.9%). In rural areas, 55.8% of households use unimproved water sources, such as surface or rainwater (28.4% and 14.5% of households, respectively); the proportion falls to 6.2% in Yaoundé and Douala and to 14.2% in other urban areas.

Access to improved water sources increases with the wealth of the household: more than 1 household out of 4 who are in the poor and very poor quartiles use rainwater or surface water; conversely, more than 50% of households in the middle income and better-off quartiles have access to piped water. Compared with male-headed households, a slightly higher proportion of female-headed households relies on unimproved sources of water (27.4% vs. 20.3%, respectively).

Figure 38: Main sources of drinking water by region, residence area, wealth and gender of the head of household



¹⁹ Stratégies Sectorielle de Santé 2016-2027

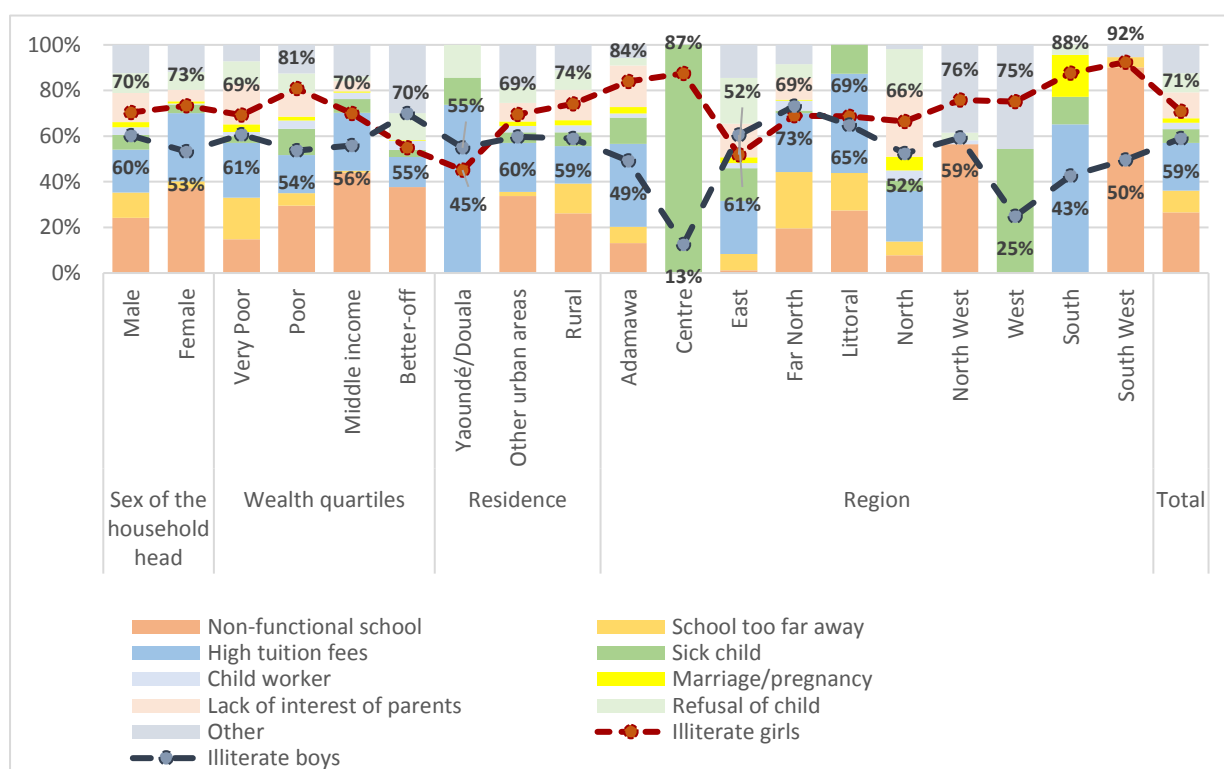
households who completed primary or secondary school (respectively, 16.9% and 51.3% in Yaoundé and Douala and 20.4% and 36% in other urban centers).

The level of literacy of the head of household increases as the wealth of the household increases: households in the very poor and poor quartiles had the highest prevalence of illiteracy (77.3% and 43.3%, respectively); whereas illiteracy among households in the middle income and better-off quartiles was much lower (17.1% and 7%, respectively). Households in the better-off quartile and in urban areas had the highest prevalence of heads of household who hold a higher-level education.

8.6.2 Children aged between 7-14 years

Overall, 12.5% of households reported having children aged between 7-14 years who received no education or had dropped out from school. The proportion is slightly higher among female-headed households than among male-headed ones (+3.3%). At the regional level, North-West had the highest prevalence of households with children between 7-14 years who received no education or had dropped out from school (30.4% of households), followed by Far-North (27.5%) and North (16.9%). Rural households also recorded a higher prevalence of illiterate children than the urban ones (18.5% of rural households vs. 3% of Yaoundé and Douala and 10.6% of other urban centers). Similarly, the lowest wealth quartiles had a higher proportion of households with illiterate children (27% among the very poor quartile and 13.6% among the poor quartile) than that of households in the highest quartiles. In rural areas, the proportion of illiterate children is higher than in urban centers (+15.5% than that of households located in Yaoundé and Douala and +7.9% of households located in other urban centers). In terms of gender disparities, the proportion of illiterate girls is higher than that of illiterate boys (71% vs. 58.9%, respectively). The gap is higher in the regions of Centre, Adamawa, West, South and South West. Conversely, in Far North, East and Littoral, high levels of illiteracy are almost equally widespread across boys and girls. In Yaoundé and Douala, the proportion of households with illiterate girls is lower than that of households with illiterate girls (45% vs. 55%, respectively), whilst in other urban areas and in rural areas the opposite holds.

Figure 41: Percentage of households with illiterate boys or girls and reasons for not attending school



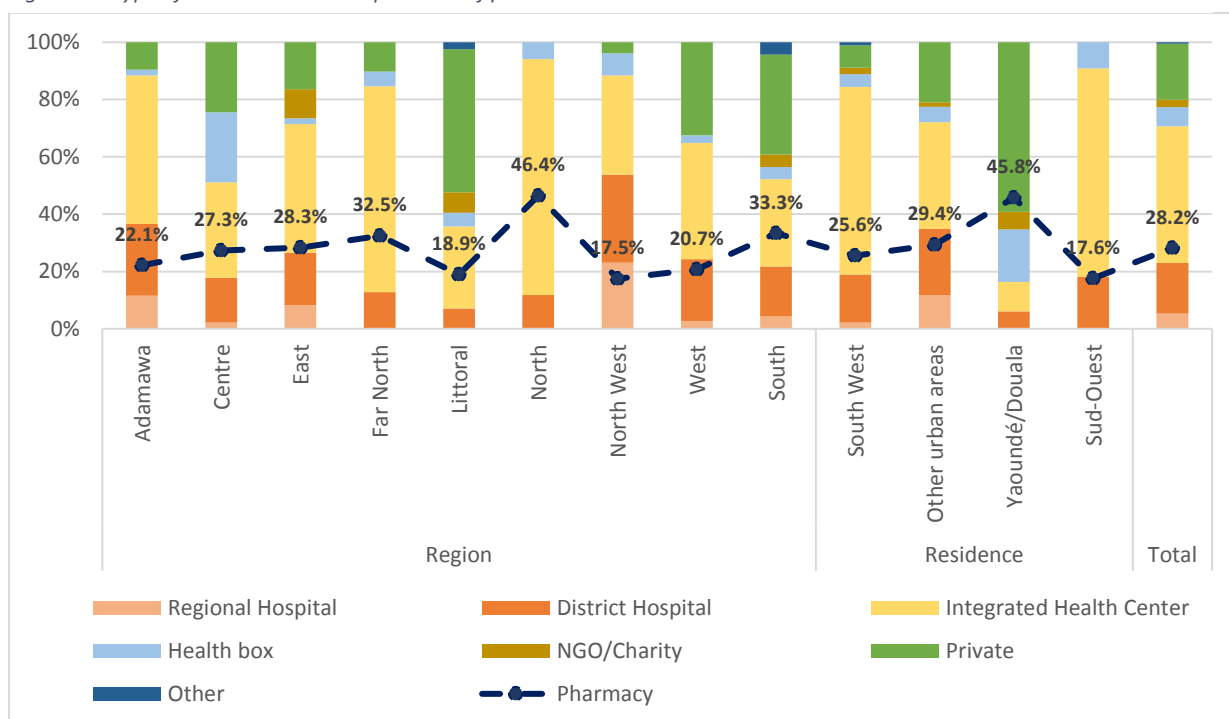
Households including illiterate school age children were also asked why they do not send their children to school. For almost 7 households out of 10 the main reason why they do not send their children to school is because schools are not functioning; 22.4% of households do not send children to school because of high tuition fees. “Not functional school” is the most common reason why children are not sent to school across both male and female-headed households (26.1% and 38.1%, respectively); however, a higher proportion of female-headed households does not send children to school because of high tuition costs (10% more than male-headed households). Male-headed households recorded a higher percentage of households who do not send children to school because parents are not interested in the education of their children (13.8% vs. 5.1% of female-headed households). At the regional level, 90.1% of households located in South-West and 57.2% of households in North-West complained about nonfunctioning schools, and 65.1% of households in South and 50% of households in Littoral reported that they do not send their children to school because of high tuition fees. All households in Centre and half of the sample in West reported “sickness of the child” as the main reason for not sending their children to school. In Yaoundé and Douala, the high costs of tuition represent the main reason why children are not sent to school for 73.1% of households, while in other urban centers and in rural areas, most households complained about non-functioning schools (35.3% and 28.3% of households, respectively).

8.7 Health

8.7.1 Presence of health-care facilities and distance and means to reach them

Overall, almost 6 out of 10 communities do not have any health-care facility. The regions with the highest proportion of villages without health care facilities are located in Far-North (74.7% of communities), North (69.6%), South-West (67.6%), South (63.5%) and Adamawa (60.3%). For 47.8% of communities, integrated health centers are the health facility closest to their village, followed by private centers (19.6%) and district hospitals (17.6%). At the regional level, similar patterns can be observed; however, private centers are more common in Yaoundé and Douala, (59.2%) and in the

Figure 42: Type of health centres and presence of pharmacies



South (49% and 42% of households, respectively). Households whose members were affected by a non-chronic disease are slightly more food secure than households without members affected by a non-chronic conditions (12.1% vs. 17.5%).

A higher percentage of urban households reported to have at least one household member to have suffered from non-chronic diseases such as malaria, respiratory infections or cardiovascular conditions. Such prevalence is higher in Yaoundé and Douala – where the proportion of households with at least one household member being affected by a non-chronic disease was 33.2%. More than 40% of households reported that household members affected by a non-chronic disease were involved in income generating activities.

Malaria is the main cause of morbidity and mortality among children under five and pregnant women. This condition is responsible for 24% of total deaths in health facilities, between 40% and 45% of medical consultations and 30% of hospital admissions. In addition, 52% of consultations in children under five are due to simple and severe malaria²³. The result of the CFSVA also shows that the most common non-chronic disease affecting both men and women is malaria, with 73.6% of households reporting to have had at least one household member affected by this condition. The regions with the highest number of household whose members have been affected by malaria are North, South and South West, where more than 80% of households reported to have experienced a case of malaria. Other conditions such as diarrhea, anemia, IRA, and worms are less common.

When facing a non-chronic disease, most households brought the sick household member to a healthcare facility (73.6% of households), 20% used street drugs for self-medication, 18.6% did self-medication but with products brought from a pharmacy and 13.7% consulted a healer. Self-medication with street drugs or consulting a healer are more common among rural households and households in the lowest wealth quartiles; conversely richer households and urban households tend to buy medications in pharmacies.

Most households do not bring sick household members to healthcare facilities because they cannot afford to pay for the service. At the regional level, 92.5% of households in Far-North reported this as the main reason why sick household members are not treated with conventional medicine, followed by Adamawa (84.2% of households) and East (74.2%). In the regions of South and Far-North households also reported not having the necessary means of transportation to reach the healthcare facility (24.5% and 22.2%, respectively, of households); also 18.3% of rural households and 22% of households in the very poor wealth quartile do not bring sick household members to hospitals or clinics for the same reason.

8.7.3 Chronic diseases

Overall, 19.7% of households reported having at least one chronically ill or disabled household member. The proportion of food insecure is slightly higher among these households than among households who do not have a chronically ill member (17.6% vs. 15.8%, respectively).

Centre, South and West are the regions with the highest prevalence of households with chronically ill members; a higher proportion of households with disabled or chronically ill members was also observed in Yaoundé and Douala (28.6%). The proportion of female-headed households with members affected by chronic diseases is higher than that of male-headed households (26.7% vs. 17.2%, respectively).

²³ Programme Nationale de Lutte contre le Paludisme 2011

Overall, cardiovascular diseases are the most common condition affecting both female and male household members. Indeed, 37.8% of households reported cases of female members affected by cardiovascular diseases and 27.6% of households reported having male members affected by the same condition. Physical disabilities are more common among women than men: 6.5% of households reported having female household members affected by this condition; whilst 12.5% of households reported having male members affected by this.

At the regional level, cardiovascular diseases remain the most common conditions affecting female household members; however, 33.8% of households in Far-North reported having female household members affected by disabilities due to accidents or illness. In the region of Adamawa, 24.9% of households have female household members affected by physical or mental disability at birth and 17.5% of them reported cases of female members affected by mental illness. Households reporting cases of male members affected by cardiovascular diseases are lower, except for Littoral, where the proportion of households including male members affected by this type of illness is similar to their female counterpart (36.8% vs. 37.6%, respectively). With a prevalence of 29.5% of households, diabetes is the most common chronic disease among men in the region of Centre. Higher proportions of households reporting having male members affected by physical or mental disabilities at birth can be observed in Adamawa (30.5%), Far-North (21.5%) and South (20.7%).

Most households having members affected by chronic illness or disability pay for treatment using their own funds or cash (95.3%); 24.2% of them use credit and only 2.3% of them has subscribed to a health insurance program. The use of credit is more common in the regions of North West (36.8% of households), Centre (35%) and East (27.9%).

8.8 Migration

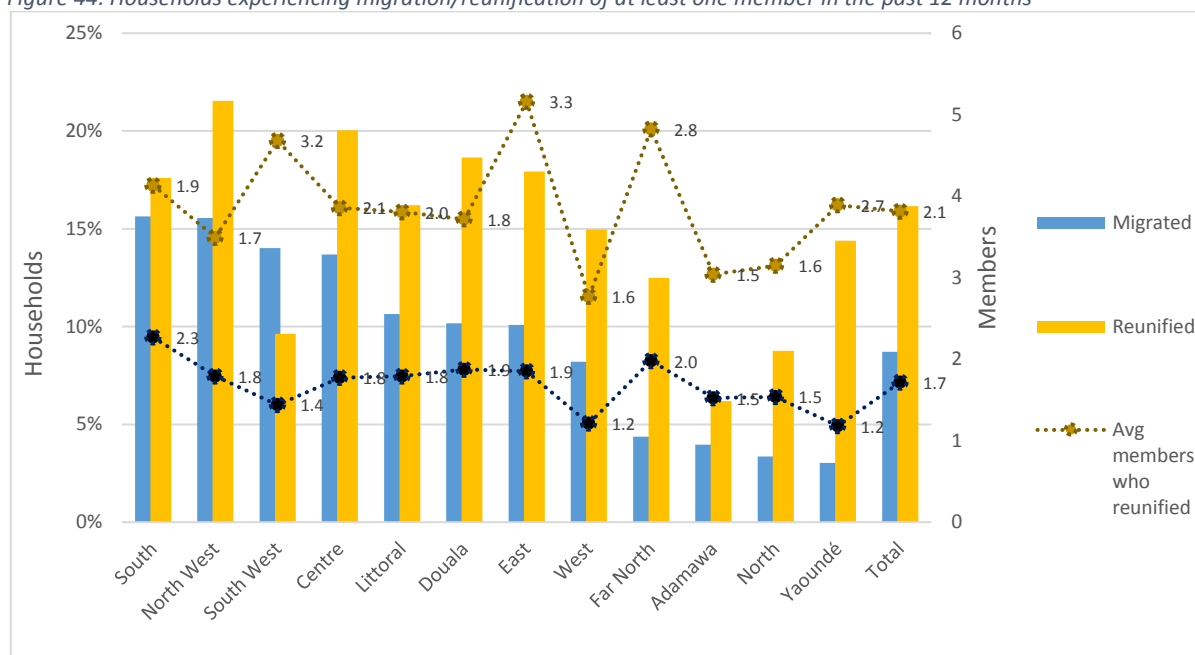
Migration in Cameroon is quite common, especially driven by security and economic triggers. Around 9% of households have at least one member of their households leaving the home, with highest prevalence of migration reported in the South and North West regions (16%). Just above half of the migrants are male (51.4%) compared to 48.6% female. The average number of migrants per household with migrants is 1.7 people. If we include households who did have migrants, the average number of members who migrated decreases to 0.15 per household.

The main reasons for migration are the search for employment and the education of young household members. Exactly half of the households with migrants had members leaving in search of work opportunities, and 38% had young household members leaving for education purposes. Insecurity was mentioned as a reason for migration by 8% of households interviewed, with peaks in Far North (13%) – which is affected by the instability of the Lake Chad region - and Adamawa (12%) – where an increase in the incidence of theft of animals and hostage taking has been recorded. These two events are forcing pastoralists to rear their animals in areas that have been historically used for farming, escalating rivalries between them and farmers²⁴.

For 78% of households who had migrants, members left their families just temporarily, including 18% who left on a seasonal basis, mainly for work opportunities, while members of the remaining 22% of households had left for good.

²⁴ <http://www.cameroon-info.net/article/cameroun-linsecurite-est-de-plus-en-plus-maitrisee-dans-la-region-de-ladamaoua-selon-le-309120.html>

Figure 44: Households experiencing migration/reunification of at least one member in the past 12 months



Migration from small secondary urban centres with limited market labour opportunities is far more common (11.3% of households with a migrant) than from the big centres of Douala, Yaoundé and the other administrative capitals (6.8%). Most migrants move to bigger urban centres such as Yaoundé or Douala (17%) or another urban centre (36%). Another segment of migrants leaves for (other) rural areas (28%) and just above 5% left Cameroon for another country. Only 25% of households with migrants reported that their head was one of the members leaving. Only 4.3% of those leaving send back food to their households of origin, while 10.7% send back money. The average value of remittances in the past 12 months is 49,500 FCFA.

A significant proportion of households (16.2%) had at least one member who re-joined the household in the past 12 months, with the highest proportions reported in North West and Centre. This prevalence remains comparatively low in Far North, North and Adamawa due to instability and less favourable macro-economic conditions. Most of them were female members (65%) as opposed to men (35%). On average, among these households 2.1 members re-joined their families. Those who re-joined their families mainly were coming from Yaoundé and Douala (15%) or other urban centres (36%).

8.8.1 Migration and food security

Migration is associated to food security. Over 16% of households with no members who migrated in the past 12 months are food insecure compared to 11% among those who had members who migrated. However, a lower proportion of those who received remittances are food secure compared to those who did not (10% vs. 16%, respectively). Likewise, the average value of remittances received by food insecure households is higher than the food secure receiving remittances (98,000 FCFA vs. 44,000 FCFA, respectively). Besides a situation of hardship triggering migration, this outcome is not straightforward and needs further in-depth analyses.

No significant difference in terms of food insecurity are observed between households with members re-joining the family after a period of absence as opposed to the others (88% vs 89%, respectively).

Rural households are more vulnerable to shocks than their urban counterparts: 73% of rural households was affected by at least one shock compared to 62.9% of households in Yaoundé and Douala and 59.7% of households in other urban areas. Rural households are also more vulnerable to multiple shocks than urban households: 29.5% of rural households reported having been affected by three shocks (5.8% more than urban households and 2.8% more than those living in Yaoundé or Douala). The divisions including the largest proportions of households affected by multiple shocks are Faro-et-Déou (71.6%) Mayo-Banyo (54.5%) Mayo-Tsanaga (51.2%) and Mayo-Rei (49.8%), which are located in the regions of Adamawa and Far-North. Table 13 summarises the results.

9.2 Type of shocks

The type of shocks that households experienced varies across regions and wealth groups. Overall, illness or death of a household member (39.7% of households), loss of job or of income sources (26.1%) and delayed rains/droughts (25.4%) are among the most frequently reported shocks.

Loss of job/income source and increases in food prices are the most frequently reported shocks affecting urban households, with no major differences across livelihood groups. This might be explained by the fact that urban households are mainly employed in the service sector (private and public), hence are more vulnerable to macroeconomic shocks.

Erratic rainfalls and pests, together with unusual diseases of livestock or crops represent the most frequently reported shocks by households located in Far-North, North, North-West and West – where agriculture is the main income generating activity. Almost 50% of food insecure and 55.4% of the poorest households affected by climate-related shocks reported having experienced monetary losses or a decrease in productivity. Such losses – that might threaten their capability to produce or have access to food – would eventually affect households' food security status.

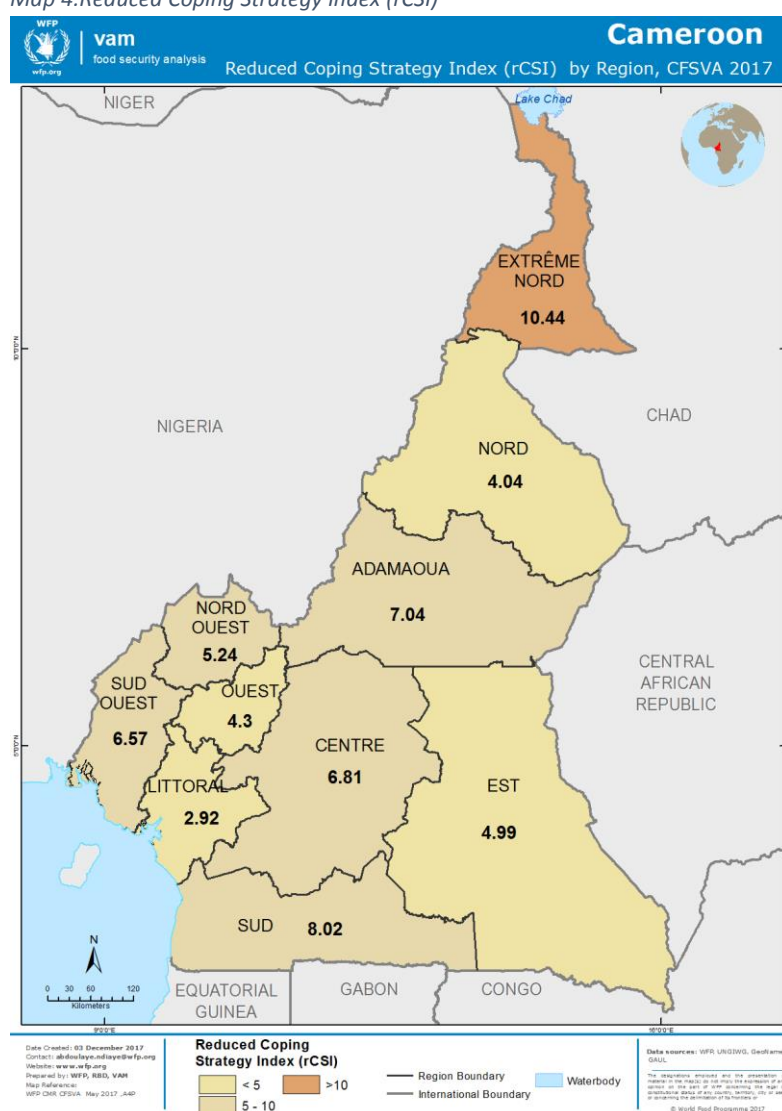
10 Coping strategies used by vulnerable groups

10.1 Food consumption-related coping strategies

The Reduced Coping Strategy Index (rCSI) is a proxy indicator of household food access that helps to understand how households cope when facing food shortages. Households were asked if they apply any of the below five food-based coping strategies when they did not have enough food or money to buy food:

1. Rely on less preferred and less expensive food;
2. Borrow food or rely on help from friends/relatives;
3. Limit portion size at mealtimes;
4. Restrict consumption by adults in order for small children to eat;
5. Reduce the number of meals eaten in a day.

Map 4: Reduced Coping Strategy Index (rCSI)



The average rCSI is calculated with both the frequency and the severity of the strategy used²⁵; the higher the score, the higher the stress level of the household²⁶ and the less food secure the household is.

Overall, two-thirds (65%) of households reported using some form of food-based coping strategy, with peaks in Far-North (80.3%) and South (71.8%). More rural than urban households reported using food-related coping strategies; moreover, the proportion of households adopting coping strategies decreases as the wealth of the household increases, from 77.9% of households in the very poor quartile to 51.9% of those in the better-off quartile. The average rCSI reflects the same patterns presented above: the highest average rCSI score was found in the regions of Far-North (rCSI =

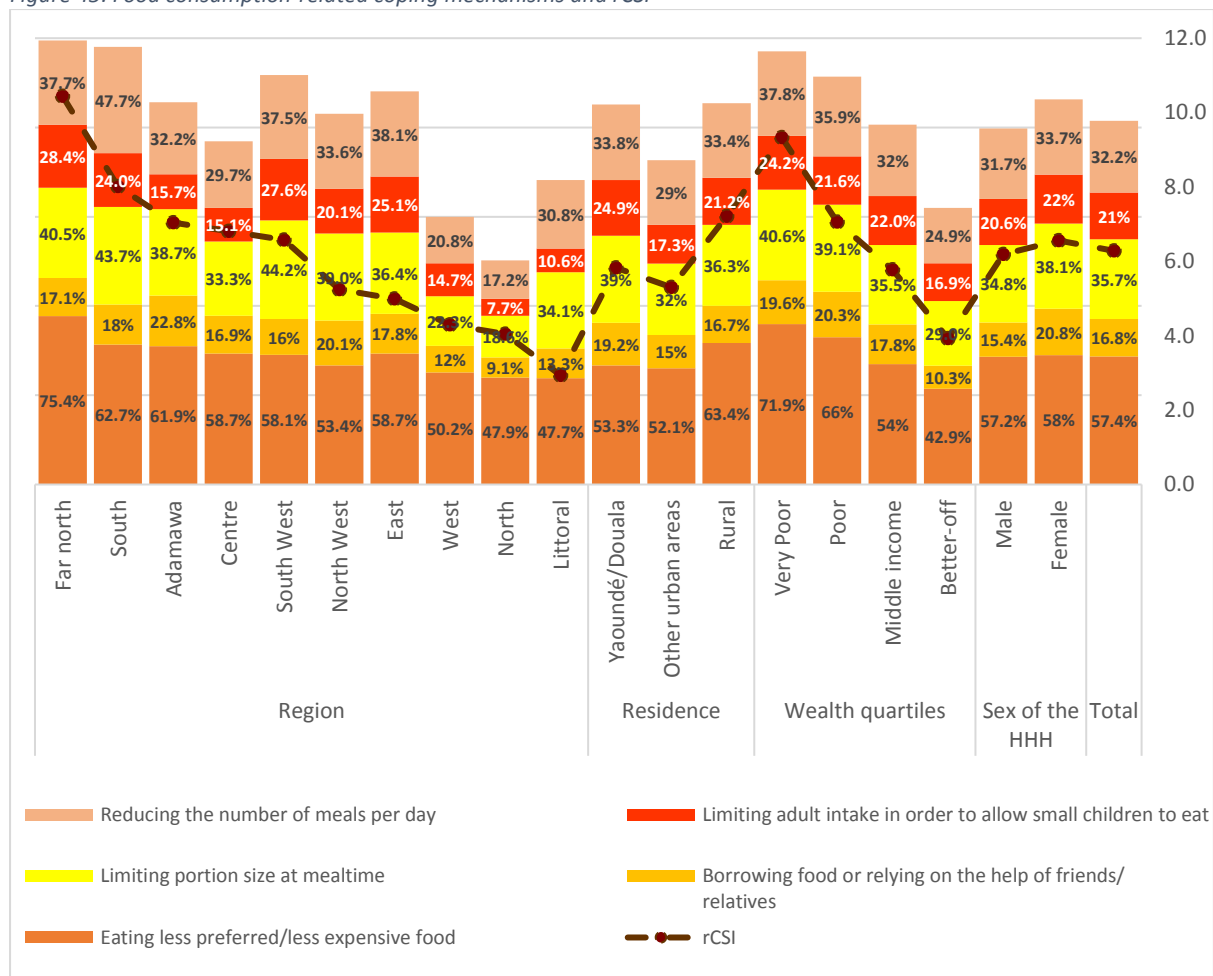
²⁵ 'Eating less preferred/less expensive food', 'limiting portion size at mealtime' and 'reducing the number of meals per day' have a severity score of 1. 'Borrowing food or relying on the help of friends/relatives' has a severity score of 2 and 'limiting adult intake in order to allow small children to eat' has a severity score of 3.

²⁶ For more information on the calculation and interpretation of the rCSI, please refer to WFP's Emergency Food Security Assessment Handbook (second edition).

10.4) and South (rCSI = 8), among rural households (rCSI = 7.2) and among households in the lowest wealth quartile (rCSI = 9.3).

In terms of the implementation of each of the five food-related coping strategies, 57.4% of households reported consuming less preferred or less expensive foods, followed by 35.7% of households who reduced their portion size at meals and 32.2% of households who reduced the number of meals per day. The most severe coping mechanism – that is, limiting adults’ food consumption to allow small children to eat – was reported by a fifth (21%) of households.

Figure 45: Food consumption-related coping mechanisms and rCSI



10.1.1 Trends

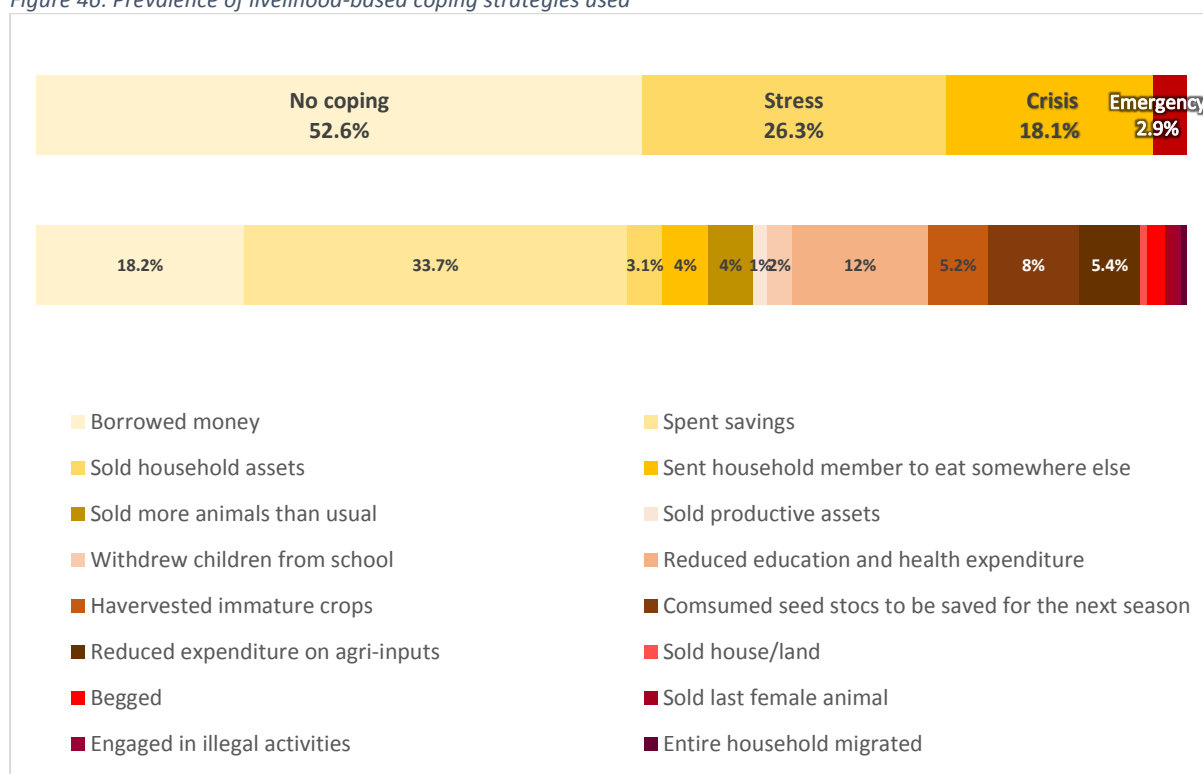
The proportion of rural households who reported implementing food-related coping strategies has increased in each round of the CFSVA, from 32% of households in 2007 to 58.4% in 2011 and 70.4% in 2017. In terms of the individual strategies, the prevalence of households who eat less preferred or less expensive foods has increased across all regions in the last 10 years. Moreover, households who limited adult consumption to allow small children to eat decreased across all regions between 2007 and 2011; however, the 2017 levels have almost reached or exceeded the 2007 levels, particularly in the regions of Far-North, Adamawa, Centre, South-West and Littoral.

Overall, 47.7% of the households reported that they used at least one livelihoods-based coping strategy during the 30 days prior to the interview. This prevalence does not change significantly across regions or between rural and urban areas.

Of the three categories, stress strategies were the most common and reported by more than a quarter (26.3%) of all households. The most common stress strategies were spending their savings and borrowing money. Peaks in the use of stress strategies can be observed in Yaoundé and Douala. Crisis strategies were implemented by 18.1% of all households. Reducing healthcare or education-related expenditures and consuming seed stocks that were to be saved for the next season were the most common. This latter crisis strategy was more common among rural households, the poorest households and in the regions of West and North-West.

Emergency strategies were implemented by only 2.9% of households; however, these coping strategies were more common in North-West, Far-North and Adamawa, where at least 4% of households reported to have used this type of strategy. Households in the lowest wealth quartiles utilized emergency strategies more than households belonging to the highest quartiles.

Figure 46: Prevalence of livelihood-based coping strategies used



11 PURCHASING POWER AND CREDIT

At the national level, the mean amount spent by a Cameroonian over a month is of 36,512 FCFA. With the national poverty line at 28,310 FCFA²⁸, the mean amount spent over a month suggests that the monthly budget of the majority of the population is not enough to access the minimum consumer basket, implying that households cannot satisfy their food and non-food needs. The regions with the

²⁸ [ECAM 4](#)

11.2 Non-food expenditure

Cameroonian households spend approximately half of their monthly budget on non-food items – that is, 46,333 FCFA – with relatively higher shares on the reimbursement of debts (16.4%), the rent of the dwelling (15.8%), transfers (13.2%) and payment of labor (11.9%). Slight variations from the national pattern can be observed across regions, wealth groups and area of residence. The share of expenditure on education and health does not reach 5%, which might be explained by the fact that most household ask for credit to pay for these services.

11.3 Credit

Nationally, only 1 household out of 4 has access to credit, with the regions of Adamawa (85.7%), South (82.3%) and Far North (82.1%) recording the highest prevalence of households who have no access to credit. Rural households cannot access credit sources as easily as their urban counterparts: in Yaoundé and Douala, the proportion of households who cannot access any source of credit is 72.3% against 77.4% of rural households and 69.6% of households living in other urban centers. Indeed, micro-credit institutions can be found and accessed more easily in urban areas: individuals who are employed in the public sector have greater chances to obtain credit from such institution than rural dwellers who are highly dependent on agriculture or primary-sector related activities.

Access to credit increases with the wealth of the households: 84.4% of households in the poor wealth quartile do not have access to any credit source compared to 71% of those in the middle-income quartile and 65.6% of those in the better-off quartile. A higher proportion of the severely food insecure households (88.6%) does not have access to credit compared to 79.6% of the moderately food insecure, and 72% of the food secure households.

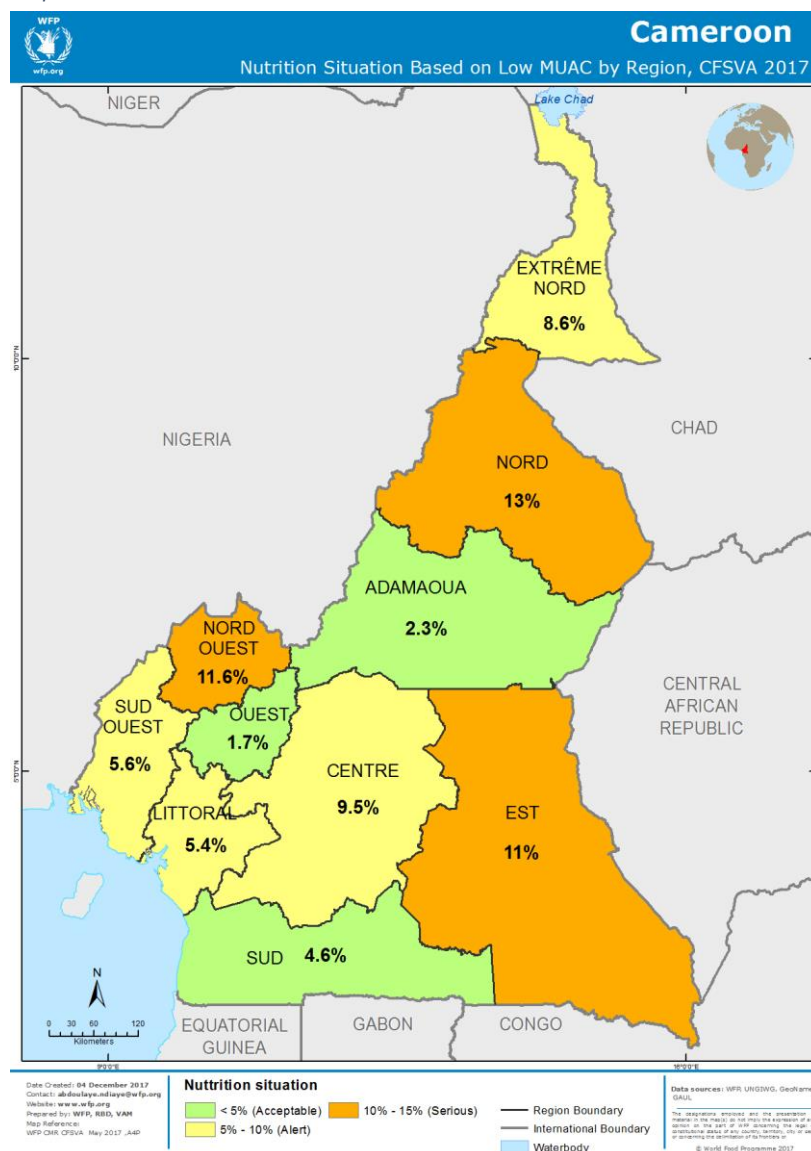
In the case they need to borrow money, Cameroonians prefer to use informal credit sources, such as the tontine system – which is the predominant source of credit – followed by parents and friends, local lenders, and government institutions. More than six in ten of the surveyed households got credit from the tontine system, 57.5% from parents and friends, 25.9% from local lenders, and 24.5% from banks. This overall distribution pattern can also be observed across the different characteristics of households and across regions, with the exception of those falling in the Great North. In this area of the country, indeed, households mainly ask for credit to friends and relatives (72.4% in Far North, 74.4% in North and 70.5% in Adamawa). This type of behavior is also common among households belonging to the poorest wealth quartiles; moreover, the proportion of households who rely on this source of credit decreases as the wealth of the household increases. Wealthier households rely on more formal sources of credit, such as microcredit institutions (70.6% of households in the middle-income and 65.9% of households in the better-off quartiles) or banks (45% of households in the better-off quartile). Reliance on formal credit institutions is also more common in urban than in rural areas.

Mayo-Sava (15.7%) and Djérem (25.7%). Djérem is also the division with the highest prevalence of households reporting to have more frequently borrowed food to feed household members (18.1% of households). The prevalence of female-headed households resorting to both types of borrowing more often is higher than that of their male counterparts (+6.6%).

12 NUTRITIONAL STATUS OF CHILDREN LESS THAN 5 YEARS

12.1 Mid-upper arm circumference (MUAC)

Map 5: Nutrition Situation based on low MUAC



Estimates of acute malnutrition among children 6-59 months were assessed using low mid-upper arm circumference (MUAC) values²⁹. Overall, the weighted prevalence of low MUAC was 7.5%, ranging from 13% in North to 1.7% in West. The prevalence of children with low MUAC was found higher in rural areas (9.8%) than in Yaoundé and Douala (3.5%) and or in other urban centers (5.3%). Low MUAC almost equally affected male and female children: 8.2% vs 7.4%, respectively. For the distribution of the prevalence of low MUAC see map 5.

At the national level, the prevalence of low MUAC among children between 6 to 23 months is 7.8%. In the regions of Centre, East, North, North West, Far North and Yaoundé, such prevalence is higher (respectively, 9.6%, 10.9%, 12.7%, 8.7% and 12%).

Moreover, the regions of East, North and West also recorded the highest prevalence of low MUAC among children whose age is 24-59 months (11%, 23.5%, 12.5%).

²⁹ MUAC was the only child anthropometric measurement conducted in the CFSVA. Low MUAC was defined as MUAC <125mm in children 6-59 months. Enumerators did not measure oedema so these results should be interpreted with caution. For population-based prevalence estimates of malnutrition, weight for height (wasting), height for age (stunting) and weight for age (underweight) z-scores below -2 SDs should be used. Prevalence estimates for these indicators can be found in the nutrition survey 2016.

12.2 Feeding practices and nutrition of children

Feeding practices affect the nutritional status of children. In this assessment, breastfeeding practices, introduction of complementary feeding and the quality and quantity of food were assessed in order to have a better understanding of the nutritional status of children.

12.2.1 Early breastfeeding

Maternal milk is microbiologically sterile and gives all the nutrients that children need for growth and development during the early months of life. Good breastfeeding practices limit diarrhea, micronutrient deficiencies and other nutrition-related diseases.

Overall, 92.2% of Cameroonian children are breastfed. The breastfeeding rate of female children (48.1%) is lower than that of male children (51.9%); such difference is significant at $p = 0.05$.

At the national level, the proportion of children breastfed less than one hour after their birth is 61.5%; 33.3% children were breastfed between 1 to 24 hours after their birth and 5.3% were breastfed more than 24 hours after their birth. There are no substantial differences in breastfeeding practices between male and female children.

The highest rates of early breastfeeding were observed in the regions of North-West (84.2%), East (77.6%) and the city of Douala (74.2%); conversely the regions of South, South-West and the city of Yaoundé recorded the lowest prevalence (respectively, 47%, 43.7% and 38.8%).

12.2.1.1 Exclusive breastfeeding

Only 32 out of 4,096 children were exclusively breastfeeding. Such limited number of children whose age is between 0 and 5 months does not allow any inference on this topic.

12.2.1.2 Continued breastfeeding

Approximately 74% of children between 12 and 15 months are breastfed after their first birthday. The CFSVA results are in line with the prevalence of the 2014 MICS: continued breastfeeding is more common in rural (74.1%) than in urban settings (71.6%); the cities of Yaoundé and Douala are the areas where continued breastfeeding is less practiced, where only 45.5% of children are breastfed after his or her first birthday. The two main cities are also the areas showing a gender divide: only 32.1% of boys continue to breastfeed after their first birthday compared to 67.9% of girls. The difference is significant at $p = 0.05$.

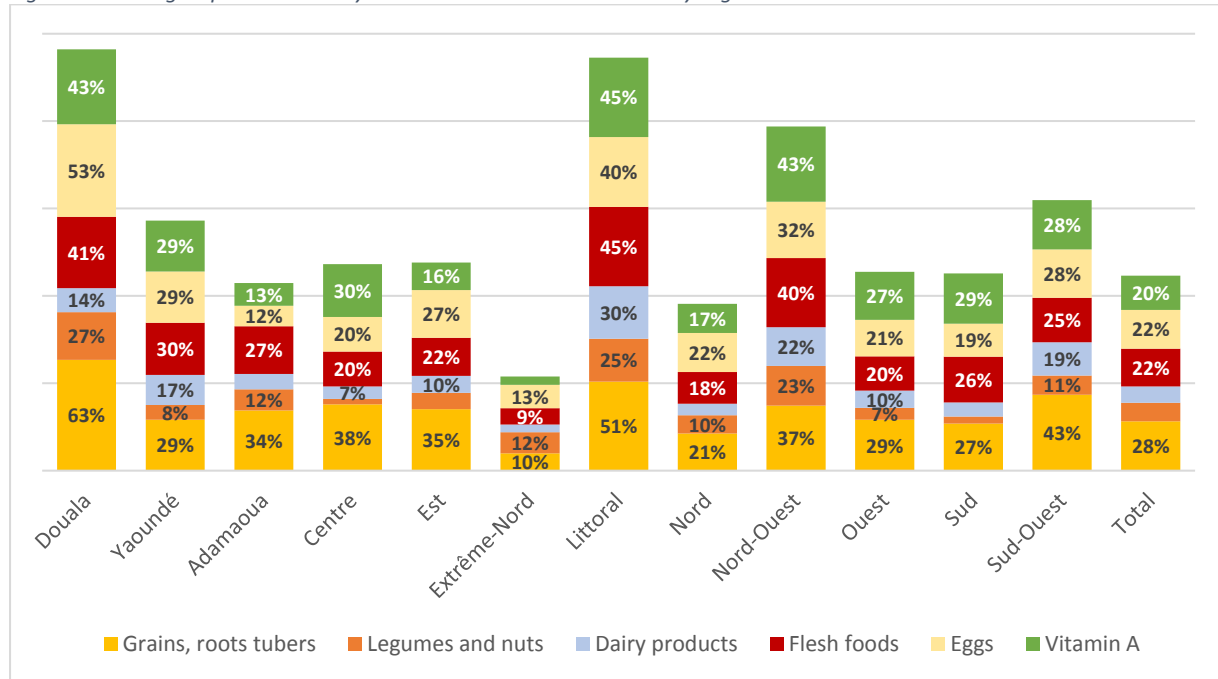
12.2.2 Complementary feeding

When the child reaches six months, breastfeeding alone cannot satisfy the child's nutritional and developmental needs. The CFSVA results show that 88.3% of children who are still breastfed have also received complementary feeding, with no significant difference between male and female children. Moreover, there is no significant association between low MUAC and the introduction of complementary feeding.

12.2.3 Minimum dietary diversity (MDD)

According to WHO, the introduction of complementary feeding is not enough to ensure the well-being and development of the child. The diet should be diversified and quantities should increase following the age of the child. Overall, only 7.6% of children between 6 and 23 months ate at least 4 food groups during the 24 hours before the interview. The lowest prevalence of this was observed in the regions of Far-North (4.4%), Adamawa (4.5%) and South (4.9%). The low proportions might help to explain the level of low MUAC among children in this age group.

Figure 49: Food groups consumed by children between 6-23 months by region



Overall, a higher proportion of children consumed food items belonging to the grains, roots and tubers group; however, the consumption of food items in other food groups varies from region to region, making it difficult to identify what are the main staple foods for Cameroonian children. The city of Douala and the region of Littoral are the areas where children consume a highly diversified diet; conversely, children located the regions of Far North (which had the lowest consumption of all food groups), Adamawa and North consume lower quantities and a less diversified diet. It is worth noting that milk and dairy consumption is extremely low throughout all the surveyed areas of the country.

12.3 Factors explaining nutritional status of Cameroonian children

The relation between low MUAC and the socio-economic characteristics of the household was assessed through the chi-squared test. The results below show only the association between the above-mentioned factors, without providing any additional information on the strength of the relation between variables.

12.3.1 Food security indicators

At national level, the results of the study show no statistically significant association between low MUAC and food insecurity outcome indicators, except for the use of food-related coping strategies. The proportion of households with at least one child with low MUAC is higher among households who used this type of coping mechanism than among households who did not use any food-related coping strategy (+3.6%, $p = .006$).

12.3.2 Demographics

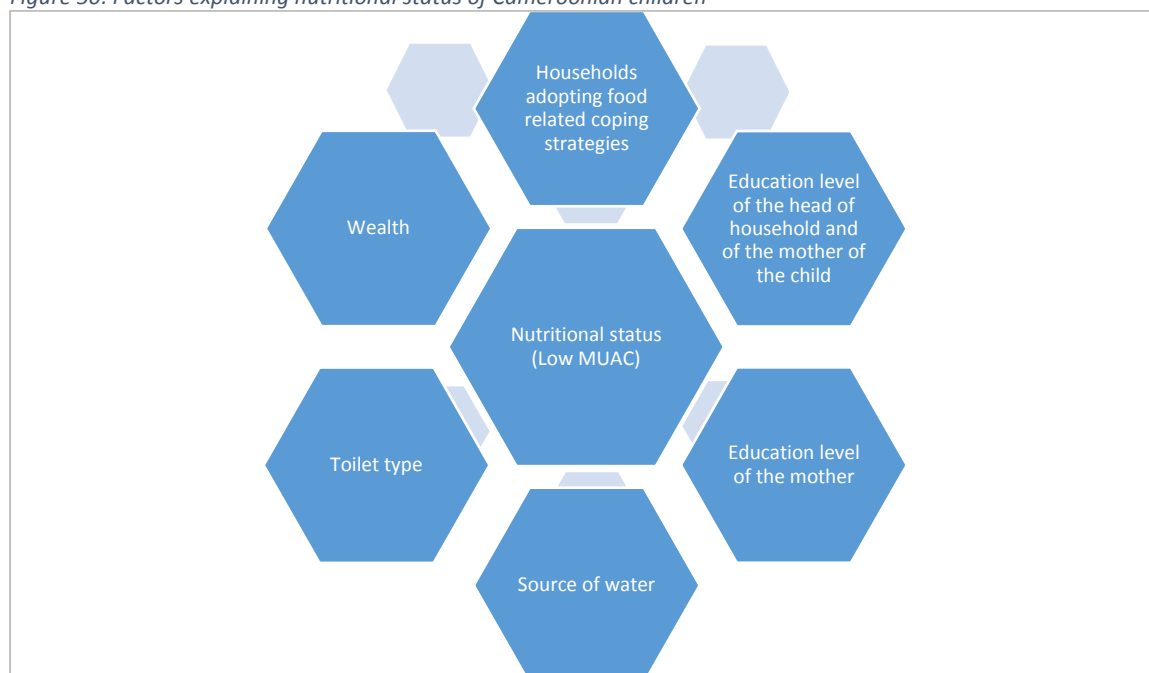
The education level of the parents – in particular, the mother – has a strong influence on children’s nutritional status. In this study, the level of education of the head of household and the level of education of the mother of the child are related to low MUAC. The proportion of households with at least one child with low MUAC is higher among households with illiterate heads (+5.5%, $p=.000$); this is even higher if one considers the education level of the mother of the child (+8.3%, $p=.002$).

12.3.3 Socio-economic characteristics

Socio-economic indicators such as access to safe drinking water and use of improved toilet facilities represent factors contributing to the nutritional status of the child. The results of the study show that the proportion of households with a child with low MUAC is higher among households not having access to improved sources of drinking water and sanitation facilities (respectively +3.9% and +6.3% compared with households using safe drinking water sources and improved toilets). The results are significant at $p=.004$ and $p=.000$.

The wealth of the household is also among the factors that contribute to the nutritional status of children. Households in the better-off quartile are less likely to have children with low MUAC compared to their counterparts (-5.6%, $p=.000$).

Figure 50: Factors explaining nutritional status of Cameroonian children



13 ASSISTANCE

13.1 Assistance received over the past 6 months

Overall, 14.7% of households received food or non-food assistance³⁰. At the regional level, West and North had the highest proportion of households who received any type of assistance in the 6 months before the survey (with respectively, 31.7% and 20.4% of households). The proportion of female-headed households who received assistance is higher than that of male-headed households (20% vs. 12.8%, respectively).

Of these households, 45% received in-kind food assistance, 18.9% cash assistance, 15.1% pesticides and 35.3% seeds. Variations across regions can be observed. In-kind food assistance covered all households who received assistance in Adamawa and South-West and most households in Far-North

³⁰ The term 'assistance' includes any type of informal or formal aid in cash or kind received by the household. Formal sources of assistance includes inputs or any type of food aid/assistance from government authorities, NGOs and UN agencies; informal assistance include help from friends, family and elites.

14 CONCLUSIONS

The CFSVA study found that 16% households in Cameroon are food insecure. Far-North, North-West, West, Adamawa and North are the regions with the highest prevalence of food insecurity.

One of the main findings of the study is the extensive vulnerability of populations in the Far-North region, which not only presents the highest prevalence of food insecurity (33.7% of households), but it is also the worst off in terms of inadequate food consumption (36.2%), the highest expenditure on food (54.2%), and poverty (65%).

The divide between rural and urban areas is also evident in the analysis. Rural areas have higher levels of food insecurity (22% of households) compared to urban areas (10.5%) and urban households tend to be better off. The difference lies in the divergent income generating activities: agriculture and small business, which are the main activities in rural areas, can provide unstable income, whereas employment in sectors such as public and private skilled labor, which are where most people find employment in urban areas, yield more profitable and stable income for households. In fact, the analysis shows that the poorest and most food insecure urban households are those who depend on agriculture and small trade for a living. Farmers are the most prevalent group in the poorest wealth quartile (10.8%), followed by pastoralists (9.2%).

Other factors influencing food insecurity are the level of education of the household's head and the presence of migrants sending regular remittances. To a lesser extent, the sex of the household's head and the household size also affect food security. Around 18% of female-headed households are food insecure compared to 15% of those that are male-headed, and the single-headed households in rural areas are more likely to be food insecure (27% vs 22% of those with two members or more).

15 RECOMMENDATIONS

Social protection/safety nets

Targeted measures to stabilize food consumption and prevent negative coping strategies:

- Set-up of shock-responsive social safety nets in Far North, North, Adamawa, East and West. This might include social protection programs aiming to strengthen the resilience of farmers and traders whose productivity and livelihoods are subject to climate change.
- Implementation of emergency measures to support crisis-affected households in the Far North, North, Adamawa and East. This might include some form of food assistance, whether in-kind or in the form of cash-based transfers.
- Implementation of additional measures to address the seasonal hunger pattern that affects many households and is a source of distress migration, especially in the Far North and Adamawa. This might include some form of seasonal safety net targeted towards subsistence farmers, petty traders and households depending on unstable income sources.

Agricultural value chains

Address the bottlenecks in agricultural value chains and market disruptions:

- Encourage agricultural investments in Far North and Adamawa. This might include the establishment of partnerships with the private sector to provide smallholder farmers with agricultural inputs such as seeds, tools and fertilizers.

- Implement measures to further support sustainable productivity and best practices to avoid post-harvest losses, especially in Great North’s rural areas. This might include the promotion of sustainable fishing and investments for the construction of storage facilities targeted towards smallholder farmers and small traders.
- Increase market interconnectivity across the Great North. This might include investments to improve existing Infrastructures and road networks for an easier access to regional markets for both local producers and consumers.

Nutrition

Ensure that there is a comprehensive response to the nutritional challenges in the country:

- Promotion of dietary diversity and healthier dietary habits in Far North Centre and West. This might include food fortification, best practices in childcare – such as early breast-feeding – and other nutrition awareness programmes targeted towards mothers and women
- Tackle illiteracy among children, especially girls, in the Great North. This might include the promotion and strengthening of existing free basic education and school feeding programs.
- Support policies to safeguard the health of the population, in Far North, North, Adamawa, East and South West. This might include the promotion of hygiene practices, malaria prevention campaigns, and public investments in road networks and health care infrastructures to increase communities’ access to health-care facilities.

Given the unexpected food security situation in West and North West, it is highly recommended to conduct a follow-up food security survey to understand if the results provided in this report were affected by the social-economic unrest that characterized the period of data collection.

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17 Annex 1 – Additional Note to Household Sampling

The minimum sample size for the household survey was obtained through the following formula:

$$n = z^2 \frac{p(1-p)}{d^2} k,$$

where:

n = minimum sample size

z = confidence level

p = Estimated prevalence of the indicator considered

k = sampling effect

d = precision/margin of error.

The following values were applied to the parameters of the above formula:

- the prevalence of food insecurity is 17.9%, the highest in Cameroon, refers to Far-North (CFSVA 2011)
- a sampling effect of 2, which is appropriate for food security indicators and it is usually implemented for CFSVAs
- 95% confidence level (z = 1.96), commonly accepted in food security assessments
- precision level at 6.54%.

The minimum sample per stratum was, therefore, 264 households, with 22 clusters per stratum and 12 households per cluster (22 x 12 = 264).

Administrative division	Chronic diseases affecting male household members						
	Hyper/Hypo tension artérielle et autres MCV	Diabetes	Cancer	Chronic respiratory disease (including asthma)	Mental illness (including epilepsy)	Physical or mental disability at birth	Physical or mental handicap acquired by accident / illness
Douala	39.3%	18.1%	1.4%	10.2%	1.2%	10.2%	6.2%
Yaoundé	36.7%	8.3%	0.0%	6.4%	2.9%	9.0%	8.8%
Adamawa	2.3%	10.6%	1.8%	8.7%	7.2%	30.5%	21.1%
Centre	23.6%	29.5%	4.8%	9.8%	5.0%	9.7%	12.1%
East	12.9%	8.9%	1.1%	12.4%	3.0%	19.3%	11.1%
Far North	13.4%	8.1%	0.7%	16.0%	5.3%	21.5%	25.8%
Littoral	36.8%	18.6%	2.9%	13.8%	12.6%	5.4%	13.1%
North	20.6%	13.5%	4.3%	9.0%	5.2%	16.7%	15.9%
North West	23.4%	10.2%	2.6%	9.7%	8.7%	7.4%	16.6%
West	30.0%	13.0%	0.7%	8.4%	6.7%	7.4%	12.8%
South	26.8%	10.2%	1.8%	9.9%	2.0%	20.7%	20.9%
South West	22.2%	16.6%	3.0%	2.6%	7.2%	13.0%	20.6%
Djérem	0.0%	25.2%	14.3%	0.0%	15.9%	11.7%	11.7%
Faro-et-Déou	0.0%	28.6%	0.0%	27.6%	0.0%	29.1%	0.0%
Mayo-Banyo	0.0%	0.0%	0.0%	0.0%	7.1%	25.4%	24.0%
Mbééré	0.0%	0.0%	0.0%	20.2%	0.0%	28.2%	55.4%
Vina	7.2%	15.4%	0.0%	7.2%	10.0%	44.0%	6.9%
Boumba-et-Ngoko	9.2%	0.0%	4.4%	10.1%	5.4%	13.3%	15.9%
Haut-Nyong	11.1%	0.0%	0.0%	11.7%	4.8%	22.6%	10.2%
Kadey	15.0%	19.5%	0.0%	13.2%	5.0%	9.1%	8.7%
Lom-et-Djérem	14.5%	13.6%	1.4%	13.4%	0.0%	23.4%	11.6%
Diamaré	12.8%	23.9%	0.0%	5.3%	5.8%	28.9%	14.3%
Logone-et-Chari	35.1%	0.0%	0.0%	0.0%	0.0%	0.0%	47.5%
Mayo-Danay	10.3%	0.0%	0.0%	32.4%	0.0%	16.6%	28.2%
Mayo-Kani	20.2%	12.3%	5.1%	24.4%	0.0%	12.1%	22.6%
Mayo-Sava	0.0%	0.0%	0.0%	0.0%	21.7%	44.8%	16.5%
Mayo-Tsanaga	13.3%	0.0%	0.0%	3.1%	15.4%	25.0%	39.7%
Bénoué	24.1%	15.2%	6.8%	7.7%	4.1%	12.5%	14.3%
Faro	5.6%	9.4%	0.0%	12.2%	4.9%	16.6%	7.0%
Mayo-Louti	17.1%	8.9%	0.0%	11.5%	8.9%	26.6%	19.8%
Mayo-Rey	9.8%	18.5%	0.0%	9.8%	0.0%	19.5%	22.9%
National	27.6%	14.5%	1.9%	9.8%	4.5%	12.5%	13.6%

18.12 Water and Sanitation

Administrative division	Water source used		Time to reach the closest source of water			
	Non-improved	Improved	< 5 minutes	6 to 30 minutes	30 minutes to 1 hour	> 1 hour
	Row N %	Row N %	Row N %	Row N %	Row N %	Row N %
Douala	2.5%	97.5%	67.4%	28.5%	3.5%	0.6%
Yaoundé	10.4%	89.6%	69.9%	26.7%	2.4%	1.1%
Adamawa	30.5%	69.5%	40.7%	49.9%	8.0%	1.4%
Centre	41.3%	58.7%	32.0%	49.3%	15.2%	3.6%
East	45.5%	54.5%	17.5%	56.6%	18.3%	7.6%
Far North	31.9%	68.1%	31.6%	50.4%	11.1%	6.9%
Littoral	27.0%	73.0%	40.9%	50.8%	5.5%	2.7%
North	42.1%	57.9%	37.2%	45.6%	10.7%	6.4%
North West	22.9%	77.1%	46.6%	39.4%	10.7%	3.3%
West	30.6%	69.4%	42.2%	41.6%	11.2%	5.0%
South	26.5%	73.5%	37.9%	49.6%	9.6%	2.9%
South West	23.0%	77.0%	54.3%	38.4%	6.5%	0.8%
Djérem	44.4%	55.6%	32.6%	57.2%	9.3%	0.8%
Faro-et-Déou	20.0%	80.0%	43.3%	42.2%	12.6%	2.0%
Mayo-Banyo	52.5%	47.5%	48.9%	46.6%	3.9%	0.5%
Mbéré	22.2%	77.8%	31.3%	57.3%	9.8%	1.7%
Vina	22.0%	78.0%	43.1%	47.5%	7.6%	1.8%
Boumba-et-Ngoko	54.6%	45.4%	24.1%	62.7%	11.0%	2.2%
Haut-Nyong	63.0%	37.0%	11.8%	46.4%	31.0%	10.8%
Kadey	35.5%	64.5%	20.6%	58.4%	14.9%	6.1%
Lom-et-Djérem	38.3%	61.7%	16.7%	59.2%	15.7%	8.5%
Diamaré	19.6%	80.4%	35.8%	49.8%	8.6%	5.8%
Logone-et-Chari	11.1%	88.9%	41.3%	40.4%	10.7%	7.6%
Mayo-Danay	26.2%	73.8%	38.1%	51.6%	6.4%	3.9%
Mayo-Kani	42.8%	57.2%	31.8%	47.9%	10.2%	10.0%
Mayo-Sava	36.5%	63.5%	26.0%	60.0%	9.9%	4.1%
Mayo-Tsanaga	57.9%	42.1%	16.2%	55.3%	19.1%	9.5%
Bénoué	39.2%	60.8%	42.7%	43.4%	8.1%	5.8%
Faro	38.0%	62.0%	29.9%	61.0%	5.1%	4.1%
Mayo-Louti	54.1%	45.9%	32.5%	40.2%	16.4%	10.9%
Mayo-Rey	35.9%	64.1%	30.0%	54.6%	12.3%	3.2%
National	25.5%	74.5%	46.0%	41.6%	8.9%	3.5%

Administrative division	Main source of water used						
	Piped water	Borehole	Surface water	Protected well	Unprotected well	Rainwater	Other
	Row N %	Row N %	Row N %	Row N %	Row N %	Row N %	Row N %
Douala	60.8%	27.4%	0.0%	9.3%	1.9%	0.0%	0.6%
Yaoundé	74.9%	12.1%	3.1%	2.6%	1.3%	0.0%	6.0%
Adamawa	12.8%	50.5%	13.6%	6.2%	13.9%	2.3%	0.8%
Centre	9.3%	39.3%	30.5%	10.1%	8.9%	0.3%	1.5%
East	4.9%	43.8%	33.1%	5.8%	9.3%	0.4%	2.6%
Far North	9.8%	51.3%	9.3%	7.0%	22.0%	0.0%	0.6%
Littoral	42.4%	28.9%	26.4%	1.6%	0.4%	0.0%	0.3%
North	16.8%	35.8%	18.8%	5.3%	20.8%	0.3%	2.1%
North West	65.9%	8.9%	21.7%	2.3%	0.7%	0.0%	0.5%
West	39.8%	23.8%	27.7%	5.8%	1.6%	0.7%	0.7%
South	15.0%	50.7%	20.4%	7.8%	5.1%	0.0%	0.9%
South West	67.8%	6.4%	16.8%	2.7%	5.0%	0.0%	1.2%
Djérem	4.4%	46.7%	15.5%	4.5%	17.4%	11.1%	0.5%
Faro-et-Déou	0.9%	65.8%	11.0%	13.4%	9.0%	0.0%	0.0%
Mayo-Banyo	5.1%	39.9%	33.3%	2.5%	15.2%	3.0%	1.0%
Mbéré	3.5%	73.4%	18.6%	0.9%	3.1%	0.0%	0.5%
Vina	25.7%	43.3%	2.3%	9.0%	17.9%	0.6%	1.2%
Boumba-et-Ngoko	8.6%	23.5%	46.6%	13.3%	8.1%	0.0%	0.0%
Haut-Nyong	1.7%	29.9%	46.7%	5.3%	15.0%	0.8%	0.5%
Kadey	5.9%	54.4%	26.9%	4.2%	5.7%	0.5%	2.4%
Lom-et-Djérem	4.9%	52.4%	24.6%	4.4%	8.6%	0.4%	4.8%
Diamaré	25.0%	49.1%	4.5%	6.3%	13.3%	0.1%	1.7%
Logone-et-Chari	4.2%	82.8%	2.7%	1.9%	8.4%	0.0%	0.0%
Mayo-Danay	6.0%	62.1%	1.9%	5.8%	24.3%	0.0%	0.0%
Mayo-Kani	5.5%	42.4%	7.6%	9.3%	34.3%	0.0%	0.9%
Mayo-Sava	3.9%	48.6%	1.1%	11.0%	34.5%	0.0%	0.8%
Mayo-Tsanaga	5.2%	27.3%	30.5%	9.6%	27.4%	0.0%	0.0%
Bénoyé	23.1%	32.1%	21.8%	5.6%	15.9%	0.0%	1.5%
Faro	0.9%	58.7%	15.7%	2.4%	16.5%	0.6%	5.2%
Mayo-Louti	18.0%	26.1%	20.6%	1.8%	30.9%	0.0%	2.6%
Mayo-Rey	1.9%	52.3%	9.1%	9.9%	22.6%	1.7%	2.6%
National	38.9%	29.8%	15.7%	5.7%	8.0%	0.2%	1.6%

Administrative division	Household member(s) in charge of water collection						
	Girls	Boys	Boys and girls	Women	Men	Housekeepers	All
	Row N %	Row N %	Row N %	Row N %	Row N %	Row N %	Row N %
Douala	3.3%	6.1%	20.3%	7.5%	4.2%	0.4%	58.2%
Yaoundé	12.5%	8.8%	19.2%	15.5%	6.5%	0.0%	37.5%
Adamawa	4.1%	4.2%	34.0%	18.3%	6.8%	1.1%	31.5%
Centre	7.1%	13.6%	32.6%	8.5%	6.5%	0.6%	31.1%
East	7.0%	11.6%	32.3%	18.9%	5.3%	0.4%	24.4%
Far North	7.9%	5.7%	28.4%	29.5%	5.2%	0.5%	22.8%
Littoral	4.9%	10.3%	42.5%	3.9%	5.0%	0.6%	32.8%
North	7.6%	6.6%	33.5%	24.8%	7.5%	0.6%	19.5%
North West	7.7%	8.3%	32.2%	8.1%	3.6%	3.3%	36.9%
West	8.7%	11.1%	33.0%	10.8%	4.7%	0.3%	31.6%
South	5.6%	10.1%	28.2%	8.5%	3.4%	0.9%	43.4%
South West	4.5%	5.5%	23.7%	8.9%	3.4%	1.9%	52.1%
Djérem	2.6%	2.4%	33.3%	16.2%	6.5%	0.0%	39.0%
Faro-et-Déou	2.7%	7.7%	37.9%	19.6%	15.7%	0.8%	15.7%
Mayo-Banyo	5.7%	0.9%	25.0%	22.8%	5.2%	0.5%	39.8%
Mbéré	4.2%	4.4%	40.2%	11.6%	4.0%	1.4%	34.2%
Vina	4.2%	5.3%	34.7%	19.5%	6.9%	1.6%	27.8%
Boumba-et-Ngoko	5.8%	9.7%	31.6%	20.4%	7.7%	0.3%	24.5%
Haut-Nyong	3.3%	11.0%	40.3%	7.9%	2.8%	1.1%	33.6%
Kadey	5.2%	9.1%	28.4%	23.3%	7.7%	0.0%	26.3%
Lom-et-Djérem	10.4%	14.1%	30.2%	22.1%	4.6%	0.3%	18.2%
Diamaré	9.4%	12.6%	19.0%	16.1%	7.0%	1.1%	34.6%
Logone-et-Chari	8.4%	3.0%	45.3%	27.7%	7.7%	0.3%	7.5%
Mayo-Danay	8.8%	3.4%	34.9%	36.7%	3.4%	0.0%	12.8%
Mayo-Kani	12.4%	5.2%	23.1%	37.0%	4.1%	0.2%	18.1%
Mayo-Sava	7.7%	6.8%	29.2%	27.5%	6.4%	1.4%	21.1%
Mayo-Tsanaga	2.2%	1.8%	23.4%	36.5%	3.0%	0.0%	33.1%
Bénoué	8.6%	5.8%	31.1%	27.2%	8.3%	0.4%	18.7%
Faro	4.7%	4.0%	42.3%	18.5%	11.1%	1.5%	17.9%
Mayo-Louti	9.1%	7.6%	30.4%	20.0%	6.8%	0.7%	25.5%
Mayo-Rey	3.4%	8.2%	42.2%	25.8%	5.5%	0.7%	14.4%
National	7.1%	8.1%	28.4%	14.7%	5.2%	0.8%	35.8%

Administrative division	Toilet used		Type of toilet used			
	Non-improved	Improved	Flush toilet	Improved latrines	Traditional latrines	Bush/pigsty
	Row N %	Row N %	Row N %	Row N %	Row N %	Row N %
Douala	17.9%	82.1%	22.9%	59.3%	17.7%	.2%
Yaoundé	13.2%	86.8%	20.0%	66.8%	13.2%	0.0%
Adamawa	58.2%	41.8%	3.5%	38.3%	56.9%	1.3%
Centre	56.8%	43.2%	5.4%	37.9%	55.8%	1.0%
East	72.4%	27.6%	2.2%	25.3%	68.3%	4.2%
Far North	87.2%	12.8%	2.4%	10.4%	74.1%	13.1%
Littoral	33.3%	66.7%	12.5%	54.2%	32.3%	1.1%
North	75.0%	25.0%	2.1%	23.0%	67.5%	7.5%
North West	54.9%	45.1%	13.2%	31.9%	50.1%	4.7%
West	31.8%	68.2%	9.4%	58.7%	31.7%	.2%
South	51.8%	48.2%	11.2%	37.0%	51.6%	.2%
South West	42.2%	57.8%	17.8%	40.0%	41.4%	.7%
Djérem	68.6%	31.4%	2.7%	28.7%	64.4%	4.2%
Faro-et-Déo	47.4%	52.6%	2.8%	49.8%	47.4%	0.0%
Mayo-Banyo	85.7%	14.3%	.2%	14.1%	81.8%	3.8%
Mbééré	67.6%	32.4%	4.5%	27.9%	67.6%	0.0%
Vina	40.6%	59.4%	5.1%	54.3%	40.6%	0.0%
Boumba-et-Ngoko	68.5%	31.5%	2.3%	29.3%	61.0%	7.5%
Haut-Nyong	86.1%	13.9%	.8%	13.1%	83.7%	2.5%
Kadey	73.5%	26.5%	1.3%	25.2%	66.0%	7.5%
Lom-et-Djérem	65.4%	34.6%	3.6%	31.0%	63.4%	2.0%
Diamaré	62.0%	38.0%	8.7%	29.3%	56.9%	5.1%
Logone-et-Chari	93.2%	6.8%	.9%	6.0%	89.2%	3.9%
Mayo-Danay	96.1%	3.9%	.6%	3.2%	72.1%	24.1%
Mayo-Kani	95.6%	4.4%	0.0%	4.4%	70.5%	25.0%
Mayo-Sava	91.8%	8.2%	1.1%	7.1%	85.8%	6.0%
Mayo-Tsanaga	96.8%	3.2%	0.0%	3.2%	80.7%	16.1%
Bénoué	68.3%	31.7%	3.7%	27.9%	66.9%	1.4%
Faro	85.2%	14.8%	.7%	14.2%	79.0%	6.2%
Mayo-Louti	85.4%	14.6%	.2%	14.4%	65.9%	19.5%
Mayo-Rey	77.6%	22.4%	.2%	22.2%	68.1%	9.5%
National	48.4%	51.6%	11.1%	40.5%	44.9%	3.5%

18.13 Education

Administrative division	Level of education of the head of household					Education status of children			
	Illiterate	Primary school	Secondary school	Higher	Professional training	Literate	Illiterate	Illiterate girls	Illiterate boys
	Row N %	Row N %	Row N %	Row N %	Row N %	Row N %	Row N %		
Douala	6.6%	16.9%	51.3%	16.4%	8.8%	97.1%	2.9%	48.4%	51.6%
Yaoundé	8.2%	16.8%	51.3%	19.0%	4.7%	96.8%	3.2%	42.8%	57.2%
Adamawa	51.9%	17.7%	24.5%	4.8%	1.2%	86.6%	13.4%	83.9%	49.2%
Centre	22.9%	28.6%	39.1%	5.7%	3.7%	93.6%	6.4%	87.4%	12.6%
East	39.3%	20.2%	33.5%	5.0%	1.9%	90.5%	9.5%	51.9%	60.5%
Far North	74.8%	7.6%	13.0%	3.5%	1.2%	72.5%	27.5%	69.0%	73.1%
Littoral	17.5%	27.8%	43.8%	5.9%	5.0%	97.5%	2.5%	68.6%	64.8%
North	66.8%	12.4%	17.6%	2.0%	1.1%	83.1%	16.9%	66.4%	52.4%
North West	31.5%	29.3%	23.8%	11.0%	4.4%	69.6%	30.4%	75.8%	59.3%
West	24.3%	26.3%	38.3%	8.3%	2.9%	99.3%	0.7%	75.1%	24.9%
South	10.7%	16.8%	54.4%	11.1%	7.0%	95.5%	4.5%	87.7%	42.6%
South West	16.8%	30.8%	29.5%	13.1%	9.8%	89.7%	10.3%	92.4%	49.5%
Djérem	62.0%	18.3%	14.5%	2.5%	2.6%	83.2%	16.8%	100.0%	51.0%
Faro-et-Déou	52.5%	16.5%	26.8%	2.4%	1.8%	89.8%	10.2%	88.8%	59.8%
Mayo-Banyo	68.7%	12.5%	14.6%	1.8%	2.5%	76.4%	23.6%	78.2%	60.0%
Mbéré	43.4%	29.7%	22.7%	3.5%	0.7%	99.1%	0.9%	0.0%	0.0%
Vina	44.4%	14.9%	32.5%	8.0%	0.2%	86.5%	13.5%	82.2%	36.3%
Boumba-et-Ngoko	46.6%	16.3%	33.0%	3.8%	0.3%	89.8%	10.2%	61.7%	58.0%
Haut-Nyong	27.2%	25.3%	39.9%	4.7%	2.9%	91.6%	8.4%	0.0%	0.0%
Kadey	56.4%	18.5%	20.4%	3.9%	0.8%	90.5%	9.5%	0.0%	0.0%
Lom-et-Djérem	33.8%	19.7%	37.7%	6.2%	2.5%	90.3%	9.7%	48.2%	61.5%
Diamaré	65.0%	12.8%	11.1%	9.7%	1.5%	80.7%	19.3%	46.0%	78.0%
Logone-et-Chari	84.9%	2.9%	9.8%	1.5%	0.9%	63.6%	36.4%	67.2%	82.0%
Mayo-Danay	68.5%	7.0%	20.1%	2.5%	1.9%	63.9%	36.1%	65.7%	65.0%
Mayo-Kani	65.9%	10.8%	20.5%	1.5%	1.3%	74.0%	26.0%	79.9%	68.0%
Mayo-Sava	77.2%	5.7%	14.3%	1.3%	1.6%	78.4%	21.6%	84.5%	68.9%
Mayo-Tsanaga	87.6%	4.6%	6.7%	1.0%	0.2%	73.4%	26.6%	0.0%	0.0%
Bénoué	64.3%	13.4%	18.7%	2.3%	1.3%	87.0%	13.0%	62.6%	48.9%
Faro	50.9%	16.9%	28.8%	1.9%	1.5%	92.6%	7.4%	55.1%	79.0%
Mayo-Louti	80.0%	7.2%	10.6%	1.0%	1.2%	69.7%	30.3%	69.1%	53.4%
Mayo-Rey	61.3%	15.1%	20.7%	2.5%	0.4%	89.5%	10.5%	0.0%	0.0%
National	32.2%	19.8%	34.1%	9.5%	4.3%	87.5%	12.5%	71.0%	58.9%



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